

Eaton RF System 2.30 Manual



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Overview Eaton RF-System

Help overview:

[How to start](#)
[Overview of all devices](#)
[Symbols and their meaning](#)
[Configuration examples](#)
[How does the routing work?](#)
[What is multiple switching?](#)
[Working with the Room Manager](#)
[Syntax for Room-Manager Bluetooth SMS](#)
[What's new in Version 2.30?](#)

Commands:

[File Menu](#)
[Edit Menu](#)
[Actions Menu](#)
[Gateway Menu](#)
[View Menu](#)
[Help \(? \) Menu](#)

What's New?

What is new for 2.30:

Supports and contains [Room-Manager](#) Software-Version V41a3, the actual file and Changelog can be found in the Subfolder „Device Software“ in the Eaton RF-System main folder

Contains the [USB-RF-Communication-Stick](#) Software USB V1.04 - RF V1.07, the actual file and Changelog can be found in the Subfolder „Device Software“ in the Eaton RF-System main folder

Contains the [USB-RF-Configuration-Stick](#) Software USB V1.00 - RF V 1.01, the actual file and Changelog can be found in the Subfolder „Device Software“ in the Eaton RF-System main folder

New display option [Status-Connections](#), Shows which actuators will send the old status message or the new extended status message to intelligent devices and offers details about the connection path. Additionally you can now choose for every actuator in the project if it should send the old status message or not independent of the reception quality

Contains the [Display Remote Control](#) Software V8d, the actual file and Changelog can be found in the Subfolder „Device Software“ in the Eaton RF-System main folder

Display of Hardware Version of all devices in „[Detailed info of all devices](#)“ and „[Overview project configuration](#)“

The [RF-monitor](#) now gives more detailed information on received telegrams

Insert virtual devices will now insert Energy measurement sensors with the right basic settings

The offset temperature for Room 1 in the Room-Manager will now always be saved correctly

Creation of manual routing connections is now realized for all devices (Energy measurement sensor, RF Radiator thermostat etc. missing before)

It is no longer possible to use datapoints of intelligent devices as outputs in the connection wizard if they are already used as inputs

Changes in mains supplied sensors will now always be tracked immediately and completely loaded to the devices with the 'Load changes' function

[Switching actuator 10A/16A](#) will be supported for testing purpose, a new generation of switching actuators with several new features and additional functions (expected release date Q1 2014)

New [Router](#) will be supported for testing purpose, a new generation of Routers (standard and with Logic function – expected release date Q1 2014)

Function [Barcode-Scan](#) will be supported for testing purpose, a new function that can be used to insert new devices to the project by scanning a Barcode situated on the device (planned realization of the Barcodes on the devices Q1 2014)

Support of the Ethernet CI, USB-RF-Communication-Stick and Smart Home Controller RF-Software Version 2.x for testing purpose, these versions are necessary to fully support the extended Status message of the new Switching actuator generation

What's new for 2.19?:

Added option to display the IP-address of a [Smart Home Controller](#); executed by right click on the device and selecting 'IP-address'

What's new for 2.18?:

[Smart Home Controller](#) is supported, a new control and communication device that can be accessed via Smartphone or Tablet (Device release date is planned for Q1 2013)

Fixes a rare issue that will prevent the USB-RF-configuration stick from losing its RF-parameters and making it inoperative

Group connections that could not be calculated completely will no longer display a mixture of red and black connections but only red (uncalculated) connections

Scanning an actuator will now correctly scan the manual routing flag in order to display the different connection type correctly

Transfer virtual device function and replace device will now correctly transfer all Room-Manager shading settings

Saving the messages of the RF-monitor will again save the message data

RM-Software update: It is no longer possible to downgrade a Room-Manager with a version greater than V39b to a lower version. Please always only use the actual Room-Manager Version (V40a) that can be found in the MRF directory in the subfolder "Device software\Room-Manager"

Virtual Room controllers used for Heating actuators will now be inserted with the right mode (Send temperature value)

What's new for 2.15?:

The actual device software of all devices that can be updated ([Ethernet CI](#), [USB-RF-Kommunikationsstick](#), [USB-RF-Konfigurationsstick](#), [Room-Manager](#)) are now located in the subfolder "Device software" of the Eaton RF-System main folder.

[Multi-Heating actuator](#) will be supported, a new mains supplied device that can be used to control electrical radiator valves

[USB-RF-Configuration-Stick](#) is supported, it's the successor of the old RS232 configuration interface

[USB-RF-Communication-Stick](#) is supported, it has similar functionality as the old USB-Communication interface

It is now possible to set Transmit- and Receive-performance of the new USB-RF-Configuration-Stick in the [options](#) window

[Room-Manager](#) Software Version V40 is supported, this version is necessary to be able to work with the new Multi-Heating actuator

[Replace device](#): The old USB-Communication interface can now be replaced by the Ethernet CI or the new USB-RF-Communication-Stick (this does not work backwards)

Connection „Send time and date when changing from X to Room-Manager“ now possible for Home-Manager, USB-RF-Communication-Stick, USB-Communication-Interface and Ethernet CI

Window contacts and humidity sensor can now be connected to Room-Manager rooms even if the room temperature is measured by a RF Radiator thermostat and Room-temperature of that rooms can be used as variable for logic functions.

Deleting a connection of a group function will now set all remaining connections of that group to „uncalculated“ instead of recalculating them (only if “Behavior when drawing connections” is set to „Do not calculate, draw immediately“)

Room-Manager connections *Actual values Room 1, Room temperature 1-6, Outdoor temperature and Room humidity 1-6* now possible for Home-Manager, USB-RF-Communication-Stick, USB-Communication-Interface and Ethernet CI

Room-Manager outputs can now be connected to Shutter actuators (Attention! Only ON and OFF commands are sent, Settings need to be changed in the shutter actuator configuration window)

After every scanning process the MRF will check if newly scanned devices have connections to existing ones. If that's the case these connections will only be drawn if the already existing devices have valid entries for the connections. If not the connections will be automatically deleted.

When copying a group of devices the switching function will now be correctly inserted instead of using the standard configuration.

[Replace device](#) and [Transfer virtual device functions](#) will now correctly work for RF radiator thermostats that already have connections to other devices

When scanning the reception quality it is no longer possible to cancel the process prematurely if unknown password protected sensors are activated

When loading changes to selected devices or to devices of an area it is now possible to toggle between mains and battery supplied devices

What's new for 2.05:

[RF Radiator Thermostat](#) is supported, a new battery supplied radiator thermostat that is used to regulate the Room temperature in combination with a Radiator

[Ethernet CI](#) is supported, a new device that connects the xComfort RF solution with the Ethernet and adds various new functions and possibilities

The message „X devices with incompatible version have been found“ will no longer be displayed for devices that have not been scanned completely

“Insert virtual devices”: The device Motion detector will now be inserted properly

The connection calculation of big group functions has been improved

The function „Load changes to selected devices“ should now always load all changes completely.

What was new for 2.00:

Addition of a [background graphic](#) to the workspace

Addition of [project notes](#) in the workspace

Addition of [device notes](#)

Addition of [group frames](#) for the optical grouping of devices

[Project topology](#), partitioning of a project and its devices into areas

[Connection wizard](#), an assistant for the easy creation of group connections

Extended [Selection Mode](#) functions 'Move group', 'Delete group', 'Load group changes', 'Reload groups', 'Load basic group settings'

Zooming the workspace ([50%](#), [100%](#))

Auto-scrolling of the workspace when devices are moved and when connections are drawn

The names of devices with which a data exchange is to take place, are bolded in the import/load window

[Password-selective scan](#) - before each scan there is an option to specify whether only devices with a defined password are to be scanned

[Renaming of devices while scanning](#)

[Undo](#) / [Redo](#) of the last 5 actions

[Importing of virtual devices from a database](#) or from an existing project

Copying devices individually or as a group, and pasting them as virtual devices

[Transfer of functions from virtual devices](#) to real devices

New [tool bar](#) with two different character sizes

The RF monitor will show the battery status of each telegram

What's new for 1.62:

[Room-Manager](#) Energy Input with Impulse input: Additionally to 'Wh' it is again possible to set the unit to 'kWh'.

Minor text and configuration errors in the Room-Manager configuration window have been fixed.

[xC MEP device](#): The scan speed has been improved.

What was new for 1.60?

[Room-Manager](#) V38a is supported, new and extended features at rooms, logical functions, outdoor temperature, scenes, shading groups as well as extended energy features

[xC MEP device](#) is supported, a new device which will be used in combination with a Eaton Smart Meter. The xC MEP transmits energy data to the Room-Manager, Home-Manager or the communication interface

Automatic scrolling over the boarder of a monitor if you change the position of a device or if you draw a connection.

Improved reaction of the scan and load window

Version verify for the Room-Manager and the xC MEP device. The version test will be done if the settings of the Room-Manager or xC MEP device will be opened. The function verifies if the software version of the device is equal to the version which was scanned into the MRF project.

Limited setting possibilities for unknown devices to limit wrong changes

Possibility to hide all connections by View -> No connections

Weblinks in the "Info about MRF" window

How to start

After starting the program, the *MRF main window* will be displayed.

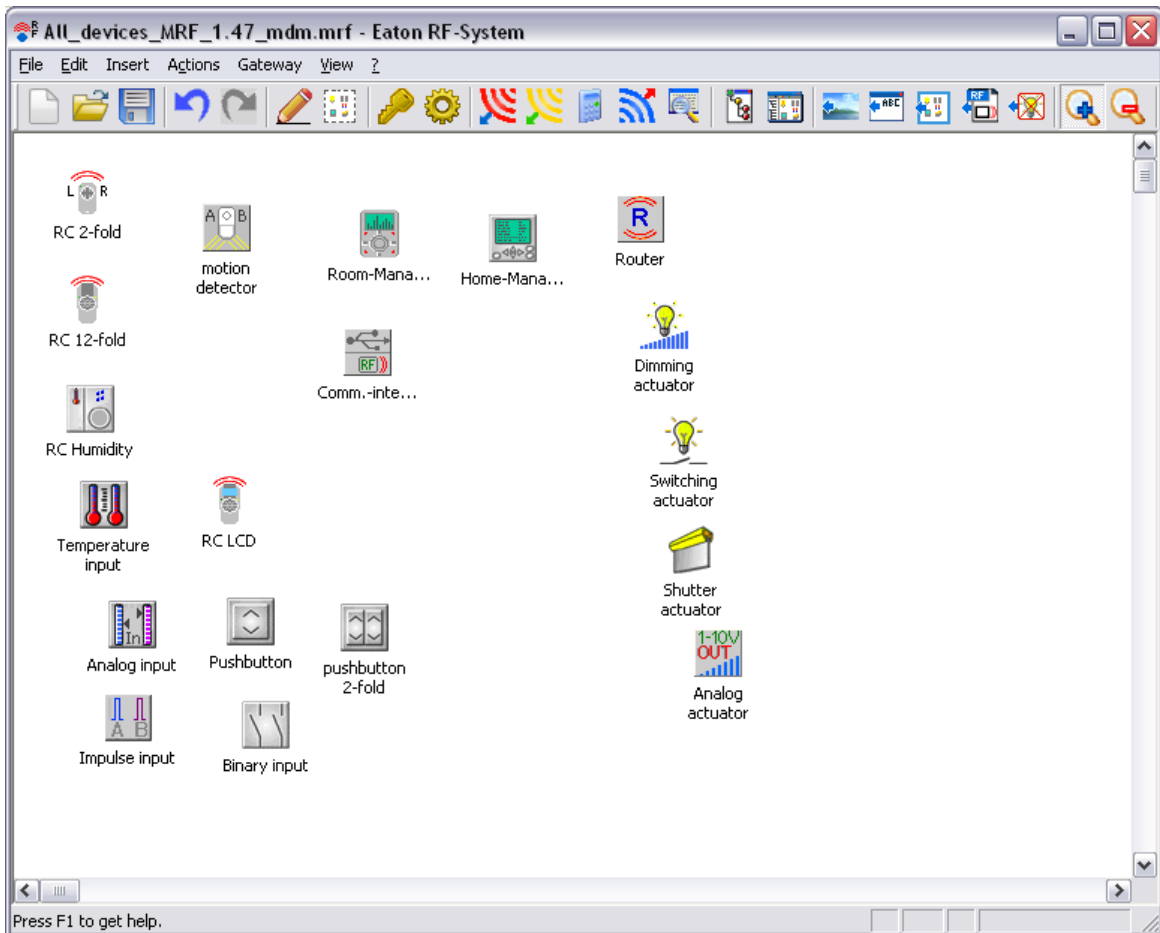
Before starting the program, however, you should connect the Gateway (RS232 interface). If you wish to do this later, you can do it in the menu item Establish Connection (See [Go Online](#)) Under [Options](#) you will see how to select the interface you want to connect the Gateway to.

As soon as the connection to the Gateway is established, you can start to [scan](#) all the desired devices.

After scanning all the mains-supplied devices placed within the reception range, you will be prompted to activate any battery-supplied devices. In case there are no such devices, activate the Quit button.

Note: Always scan mains-supplied devices before you activate any battery-supplied devices. To make it easier, a scanning window displays which and how many of the devices have already been scanned.

Then your main window should more or less look like that:



Now that you have scanned your system, you can start with its configuration.

To change the position of a device on the screen, left-click and hold the device icon. Now drag it to the desired position. After releasing the left mouse-button, the new position will be accepted.

Activating a sensor highlights the matching symbol on the screen. So it is easy to distinguish between several similar sensors, and to give them a name.

Additional setting possibilities:

See [System password](#)
 See [Connection Mode](#)
 See [Selection mode](#)
 See [Load](#)
 See [Symbols and their meaning](#)
 See [Configuration Examples](#)

Commands of the File Menu

The **File** menu includes the following commands:

New	Creates a new project
Open...	Opens an existing project
Save	Saves an opened project under its file name
Save as...	Saves an opened project under a file name you enter
Detailed Info of all devices	Lists some additional info about the devices (serial number,...)
Overview project configuration...	Shows detailed data of all devices and connections (Professional version only)
1, 2, 3, 4 Filename	Opens the selected project

[Quit](#)

Quits the configuration software of the xComfort components

The Command New (File Menu)

Use this command for creating a new project, e.g. for scanning a complete system of xComfort components.

To open an existing file use the Open command

Shortcuts

Toolbar:



Keyboard:

STRG+N

The Command Open... (File Menu)

Use this command to open an existing project.
Selecting this command opens the dialog box [Open](#).

Recently edited projects can also be opened directly,
see [1, 2, 3, 4 Filename](#)

New documents can be created with the [Command New](#).

Shortcuts

Toolbar:



Keyboard:

STRG+O

The Command Save (File Menu)

Use this command to save the active project under its current name and directory. When saving a project for the first time use the [Dialog Field Save as](#), so you can type a name for your document. Also select the [Command Save as](#) if you wish to change the name and the directory of an existing document.

NEW for 1.53: In the program settings you can now activate if a copy of your project including a timestamp in the filename should be generated if you use the 'Save-command'.

Shortcuts

Toolbar:



Keyboard:

STRG+S

The Command Save as (File Menu)

Use this command to save the current project and to give it a name. The xComfort MRF Software displays the Dialog Box Save as, so you can type a name for your project.

To save a document under its existing name and directory use the [Command Save](#).

Detailed Info of all Devices...

Here you will find a list of detailed data on [scanned Devices](#), among other things the serial number and software version will be displayed here.

Overview Project Configuration

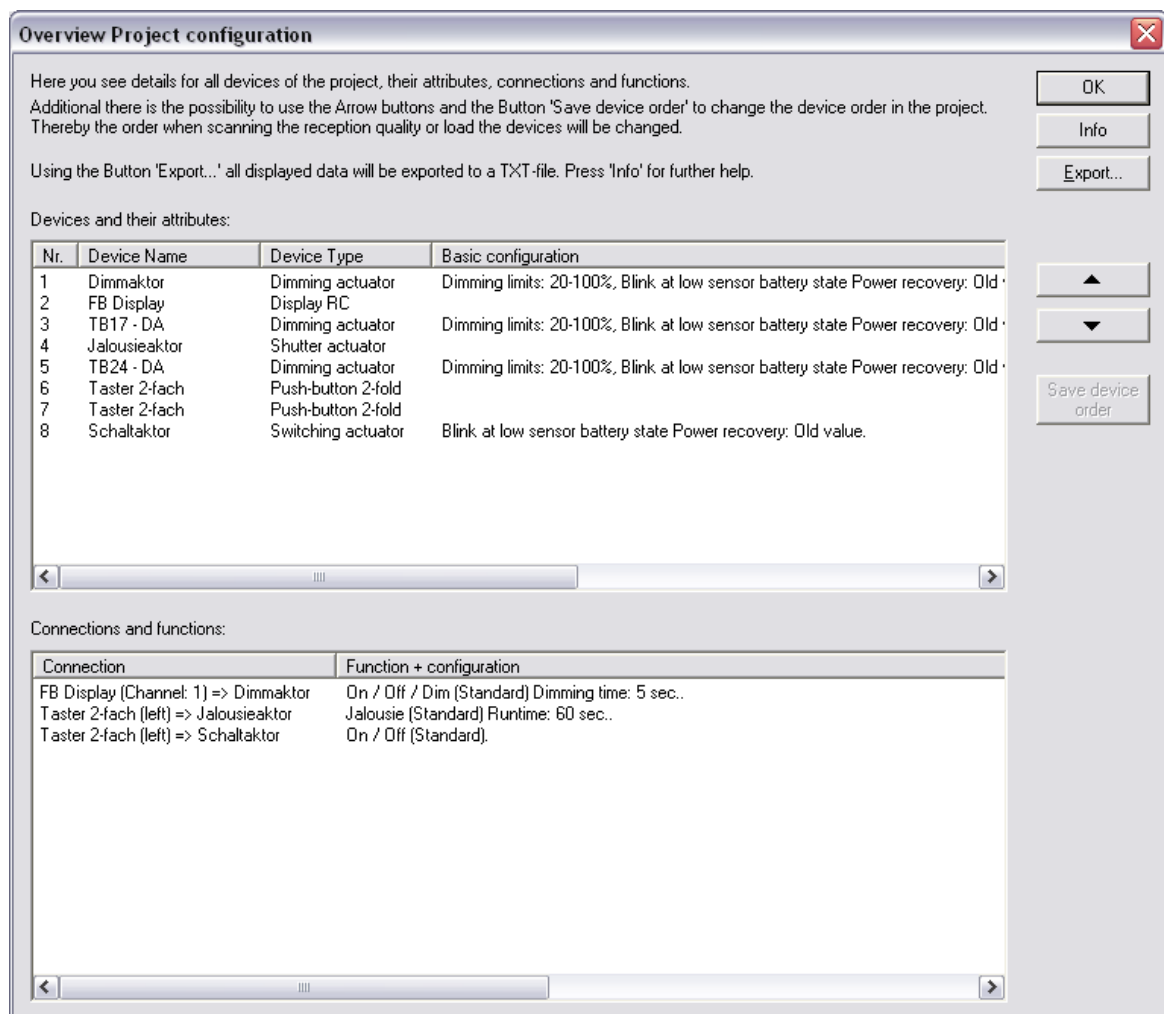
Here you will see a list of all devices and their settings as well as an accurate overview of all sensor - actuator connections and their functions. The serial number, software version, device note, area index and area name for the devices will also be displayed here.

By left-clicking on one of the column headers, the list will be alphabetically sorted by this category. Individual elements within the list can be moved by using the **arrow up** and **arrow down** buttons. With the button **Adopt sequence**, the new device sequence is saved.

The sequence of the devices (column 'No.') has an effect on all **Loading functions** and on **Scanning reception quality**. Devices with a lower number are always handled first.

With the **Export...** button you have the option to save the system configuration in a TXT file in order to open it later in a spreadsheet program (e.g. MS Excel).

Example:



This function is only available in the professional version.

The Commands 1, 2, 3, 4 (File Menu)

Use the numbers and file names listed at the end of the File menu to open the four projects you closed last. Select the number of the project you wish to open.

The Command Quit (File Menu)

Use this command to close your session. The xComfort MRF Software asks if you wish to save projects with modifications not yet saved.

Shortcuts

Mouse:

Double-click the system menu of the application.



Keyboard:

ALT+F4

Commands of the Edit Menu

The **Edit** menu includes the following commands:

Undo	Undoes the previous action
Redo	Repeats the last undone action
Connection mode	Activate or deactivate draw mode
Selection mode	This allows the connection (configuration) of two devices
Define password...	Activate or close selection mode
Load password	It is possible to select more than one device.
Delete password...	You can define the system password.
Options...	Loads the defined password in the devices.
	Deletes the password in the devices and resets the system password.
	Opens the window with the setting options

Undo

When this function is executed, the last action that was triggered through an MRF command is undone.

A maximum of 5 steps can be reversed, whereby only those commands that actively change something in the configuration can be undone.

This function is reset by executing the functions Load, Scan, or Scan Reception Quality.

Redo

This function becomes active when the Undo function has been previously executed at least once. It restores the previously reversed action. This function is reset by executing the functions Load, Scan, or Scan Reception Quality.

Connection Mode On/Off

With the drawing mode on/off you can select if [Connections](#) should be drawn or if the device icons on the screen should be dragged and dropped.

The position of the device icon is saved in each device, so in case of rescanning xComfort products there is no need to position them again in the desired place.

Connecting two xComfort devices is possible by left-clicking and holding a device icon. Now select the required connection by moving the mouse pointer to another device icon. By releasing the left mouse-button the assignment will be accepted and the connection will be shown as a black line.

Should a required connection not be displayed, select *Connections* in the menu item [View](#) in order to display all the assignments you have already made.

If you see green or orange connection lines, you have selected the item View for [Reception Quality](#)

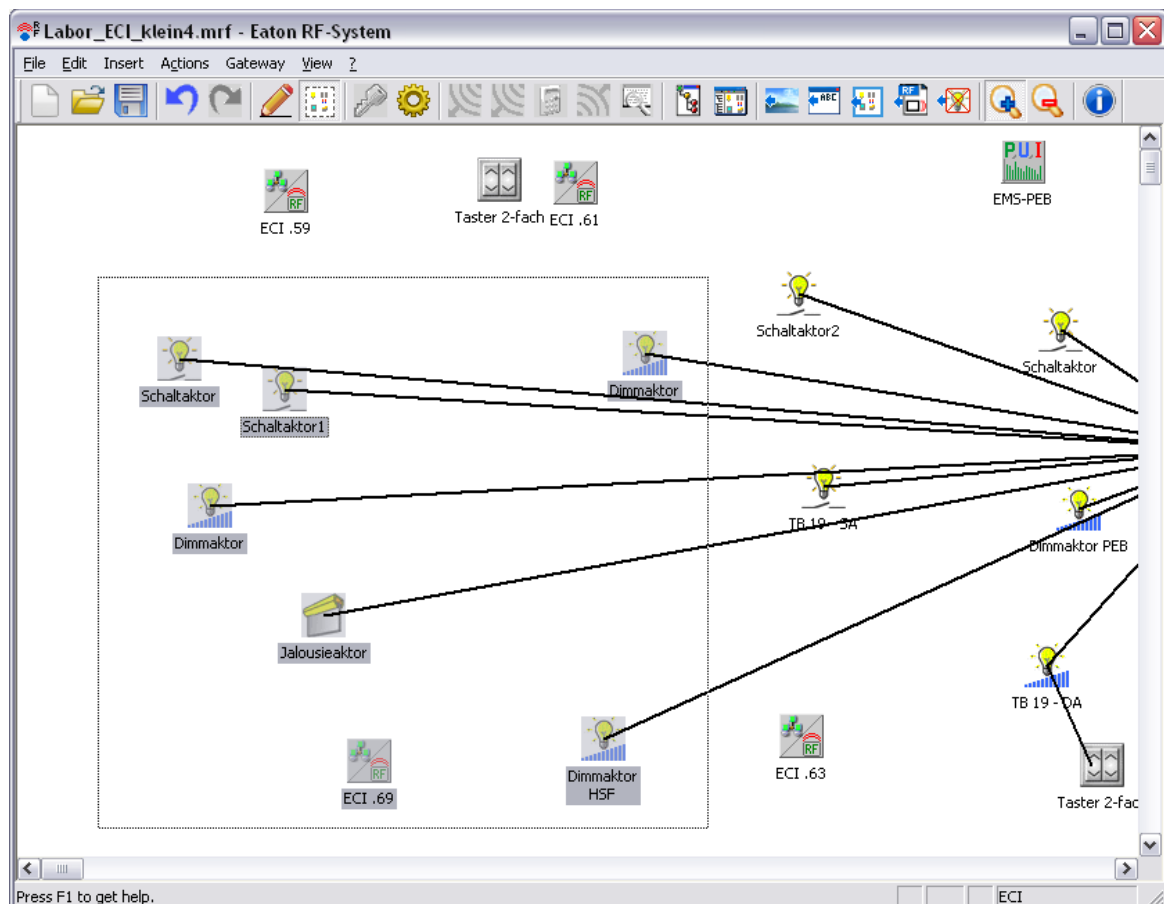
In addition, the drawing mode can be turned on and off directly in the [Toolbar](#)

Selection mode

The main purpose of selection mode is to include new devices in an existing project, but it can also be used to recalculate the reception quality of individual selected devices or simply to display existing reception qualities.

Basic function:

As soon as selection mode is activated, no further connections can be drawn, nor can settings be made in the devices. The drop-down menu for a device changes from the normal functions to the selection mode functions.



As is usually the case in Windows, several devices can now be selected, either by dragging a selection window, STRG+ left-click on a device or by pressing SHIFT + left-click/drag window. As soon as at least 2 devices have been selected, the drop-down menu for selection mode can be accessed by right-clicking on a device.

The following new functions are available via the drop-down menu:

"Display reception quality of this device" -> shows the reception quality lines from this device to all the other selected devices.

"Display reception quality for the selected group" -> shows the reception quality of all devices in the selected group with respect to each other

"Display reception quality with respect to the group as a table" -> shows the reception quality for this device with respect to the selected group in table form (percentage + device name).

"Recalculate reception quality with respect to the group" -> recalculates the reception quality for this device with respect to all the selected devices.

"Recalculate reception quality within the group" -> recalculates the reception quality of all the selected devices with respect to each other.

The functions described above mean, for example, that the reception quality of a new device to its closest neighbours can be calculated very quickly without having to involve the entire system in this procedure.

New for 1.55:

[Configure group basic settings](#)

[Configure the group function](#)

New with version 2.0:

"Assign topology" -> Select an area of the [project topology](#) to which you want to allocate the selected devices

"Copy selected devices" -> Copies the selected devices to the clipboard as virtual devices

"Remove selected devices" -> Removes the selected devices from the project

"Load changes in selected devices" -> Loads configuration changes in the selected devices (if there are changes)

"Load basic settings in selected devices" -> Loads basic settings in the selected devices (entire configuration is deleted)

In addition, the screen position of multiple devices can also now be changed by selecting multiple devices and using drag & drop.

Define password

You can define a password for the system under this menu item. Each device forming part of the project, or which is to be scanned at a later date, will receive this password when loading (password, changes or complete).

When you start a new project and click on "Scan", this window also opens and you can define a password even before scanning. This password cannot be loaded in the devices during scanning, only when loading changes on completion of the scanning process.

A password is used to ensure that the system is protected from unauthorised access.

Also see [Project-Settings and Project-Password](#)

Load password

All devices forming part of the project which do not yet have the current password are loaded with the defined password.

This command exists both for an individual device (via the device drop-down menu) or for the system as a whole via "Edit -> Load password".

Also see [Project-Settings and Project-Password](#)

Delete password

The password for all devices within the project which have a password is deleted.

Individual devices in which the password has already been deleted previously or which did not yet have a password will not be included. The password for the project will also be reset to "No password".

The password can also be deleted individually from one device via "Device drop-down menu -> delete password".

However, parameterization and assignments to other xComfort devices will not be deleted.

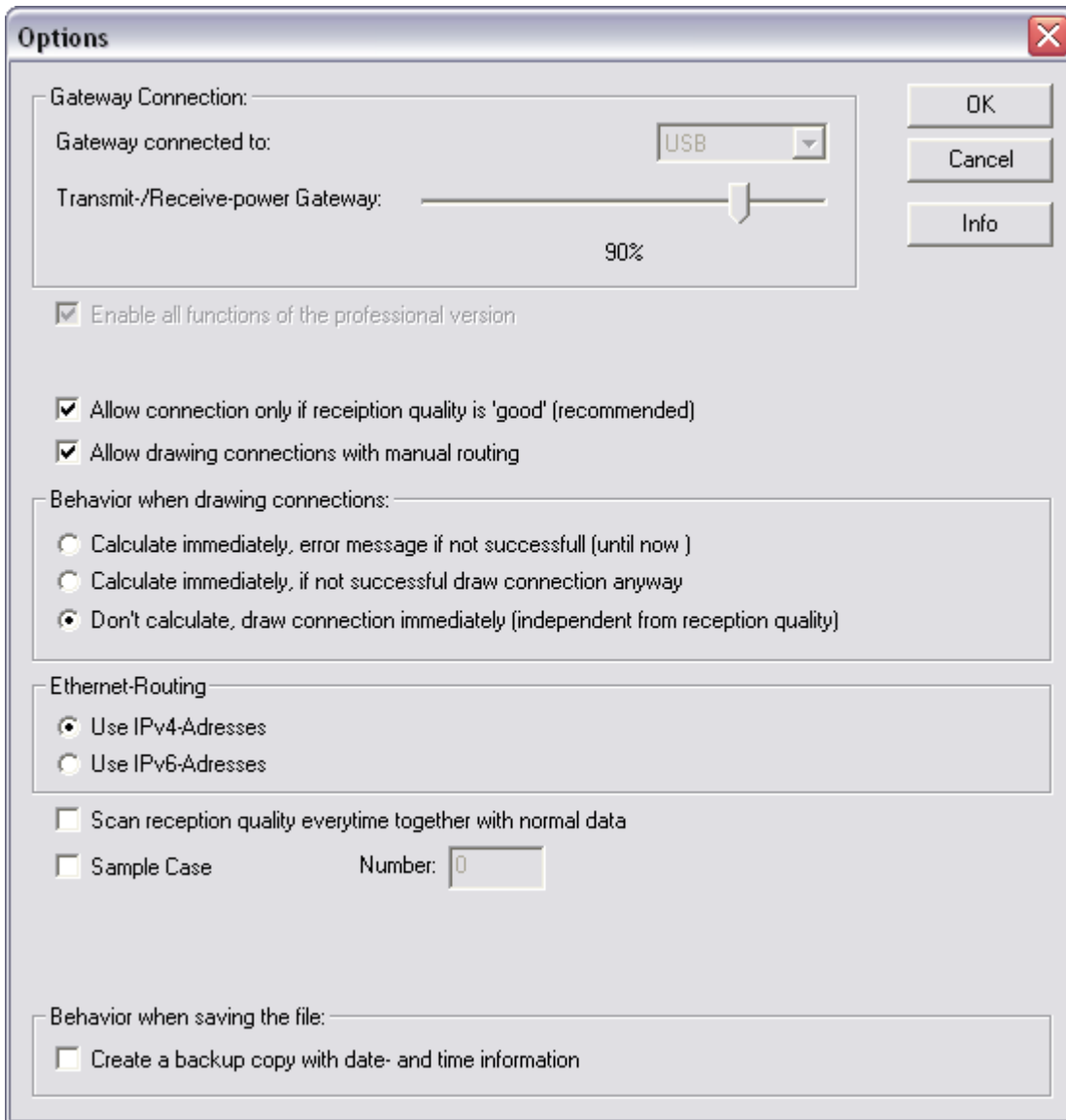
Note:

This means that the devices will be accessible to anyone once again, or, in other words, that any individual can scan your devices and change the parameterization.

Also see [Project-Settings and Project-Password](#)

Options...

By clicking Menu -> Edit -> Options you can reach the program options



Here you can define the serial interface port (COM Port), where the Gateway is connected.

The quality requirement for the reception quality can also be configured („Allow connection only if reception quality 'good' (recommended)”. This means only good connections can be calculated successful (not medium quality connections). This raises the number of routing paths but guaranties a safer transmission.

In the professional version you can determine the behaviour when drawing connections

1. Calculate immediately, error message if not successful (until now)

Like until now the connections is only drawn if the calculation is successful.

2. Calculate immediately, if not successful draw connection anyway

If the connections is drawn the system will try to calculate it immediately. When the calculation is not successful the connection is drawn anyway but in red.

3. Don't calculate, draw connection immediately (independent from reception quality)

Every connection will be drawn immediately as red an uncalculated connection. You can manually calculate such connection by clicking on it and “Calculate connection” or for the full project menu

-> edit -> Calculate all connections new

New: Scan also reception quality with normal data.

When deactivated no reception quality is scanned. You can only scan it separately by a new menu item.

New for 1.53:

Behavior when saving the file: Create a backup copy with date- and time information

If this option is activated everytime you use the command 'save' an additional copy of your project including the time stamp in the file name is generated in the same folder.

New with 2.0:

The functions of the professional version can now be activated by selecting the option "Enable all functions of the professional version".

Ethernet routing:

In the event that Ethernet communication interfaces are present in the project, you can define here whether the Ethernet routing should be conducted over IPv4 or IPv6 addresses.

New for 2.15 (only if working with USB-RF-Configuration Stick):

If you are using the new USB-RF-Configuration Stick you can set the Transmit- and Receive-power of the Gateway (Default 90%).

In some situations it may be of advantage to work with a reduced range (in special when you want to scan only small areas).

After every MRF restart this is always set to 90% to prevent unintentional settings.

Commands of the Insert menu


The **Insert** menu contains the following commands.

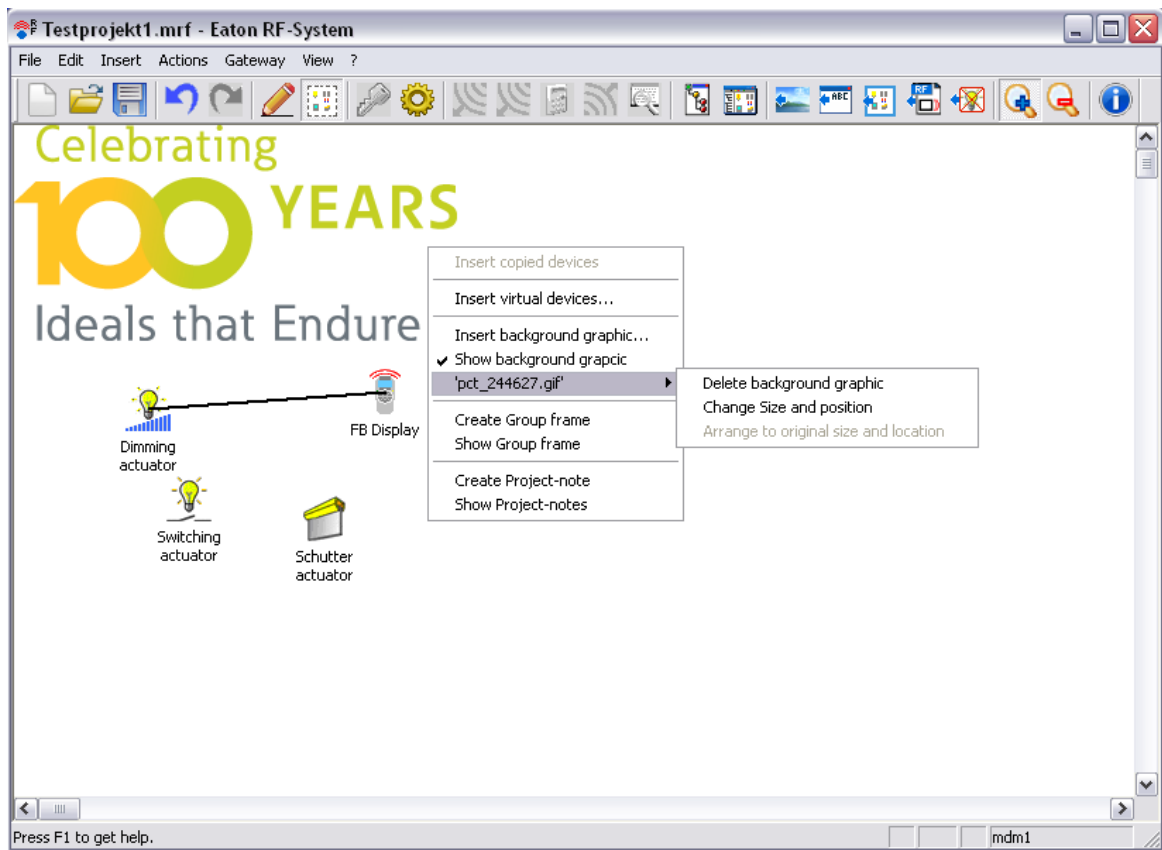
Background grafic...	Adds a background graphic to the workspace.
Project-Note	Adds a note to the workspace.
Group frames	Activates/deactivates the mode for drawing group frames
MRF Project...	Option to import devices in an existing MRF project or as a configuration template
Virtual devices...	Option to insert desired virtual devices from a device database
Devices by Barcode	Inserts devices by scanning a Barcode

Insert background grafic

This function offers the possibility of inserting a desired graphic (BMP, JPG, JPEG or GIF format) in the project as a background graphic. Whether this graphic depicts a building plan or the installer's company logo, is left to the user's discretion.

The function **Insert background grafic** can be executed in several ways:

1. Menu **Insert -> Background grafic...**
2. Right-click on blank MRF workspace -> **Insert background grafic...**
3. Tool bar -> 



After a background graphic has been selected and the **Open** button has been activated, the background graphic will be inserted in original size, with the upper left-hand corner in the null position of the MRF workspace.

By right-clicking in the blank workspace or on the background graphic, the following options will appear in the pop-up menu:


- **Display background graphic:** According to settings, shows or hides the background graphic
- **<graphic name> -> Delete background graphic:** Removes the background graphic from the project
- **<graphic name> -> Change size and position:** Unlocks the background graphic so that the size/position can be changed with the mouse pointer, or locks it again
- **<graphic name> -> Align in original size and null position:** If the size and/or position of the background graphic has been changed, the original size and position can be restored with this command

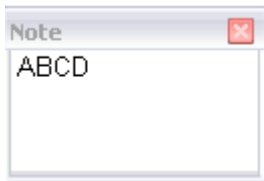
The background graphic has no influence on the devices or other project settings.

Insert project note

This function offers the option of inserting text notes with a maximum of 255 characters in the workspace of an MRF project. It can be used, for example, to store information on device groups in the project or general information on the configuration.

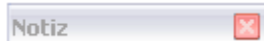
The function **Insert project note** can be executed in several ways:

1. Menu **Insert -> Project note**
2. Right-click on blank MRF workspace -> **Prepare project note**
3. Tool bar -> 



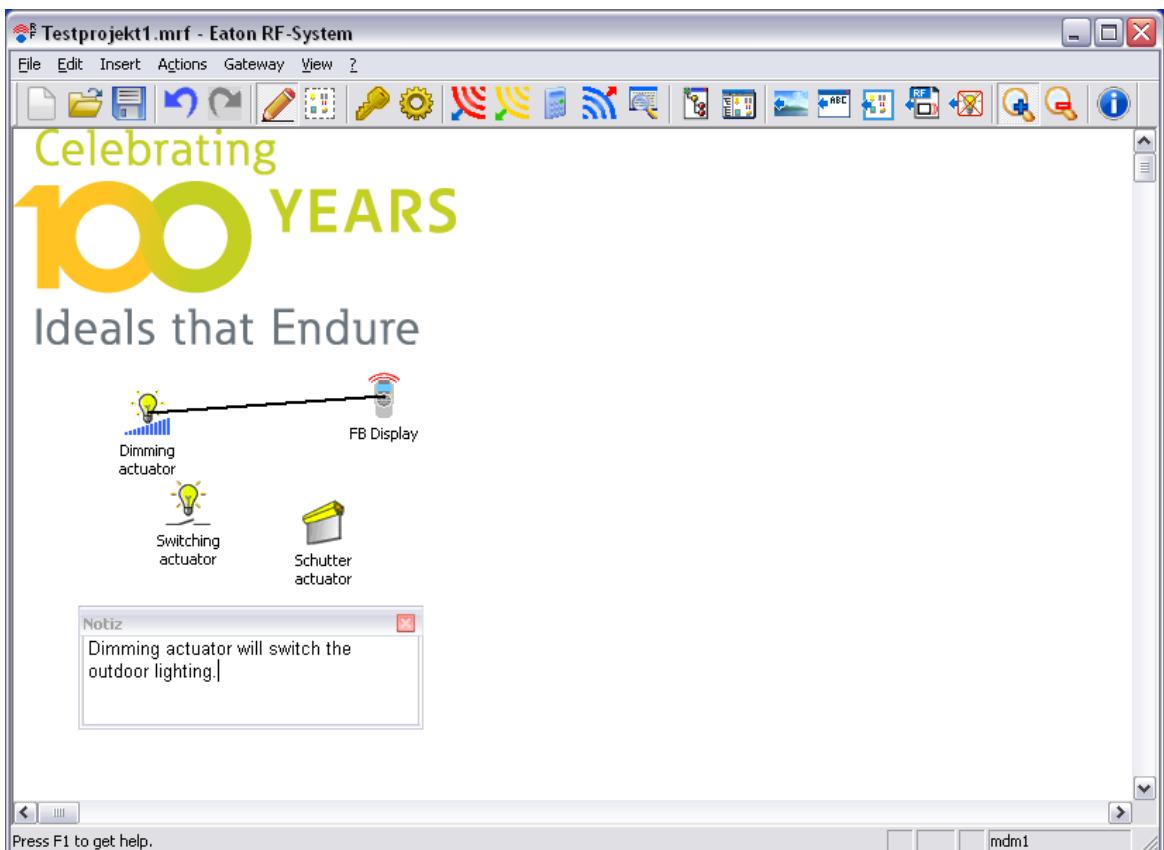
Each project note can be positioned as desired in the project using drag & drop, and the height and width can be adjusted by clicking and dragging the note borders.

By double-clicking on the title (note), the note is minimised and only the title is visible without contents. The note can now be moved without changing the position.

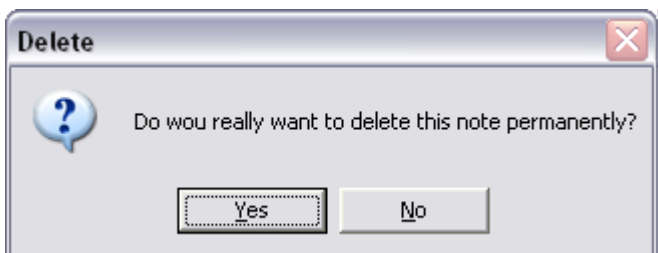


By double-clicking on it, the note is maximised once again and displayed in its original position.

All project notes are shown or hidden by going to **View -> Project notes** or by right-clicking in blank MRF workspace -> **Show project notes**.



If you wish to permanently delete a note, click on 'X' and confirm the warning notice with YES.




Insert group frames

This function offers the option of drawing frames with titles (max. 21 characters) in the workspace. These can be used for optical grouping of the device groups when the Project Topology function is not used.

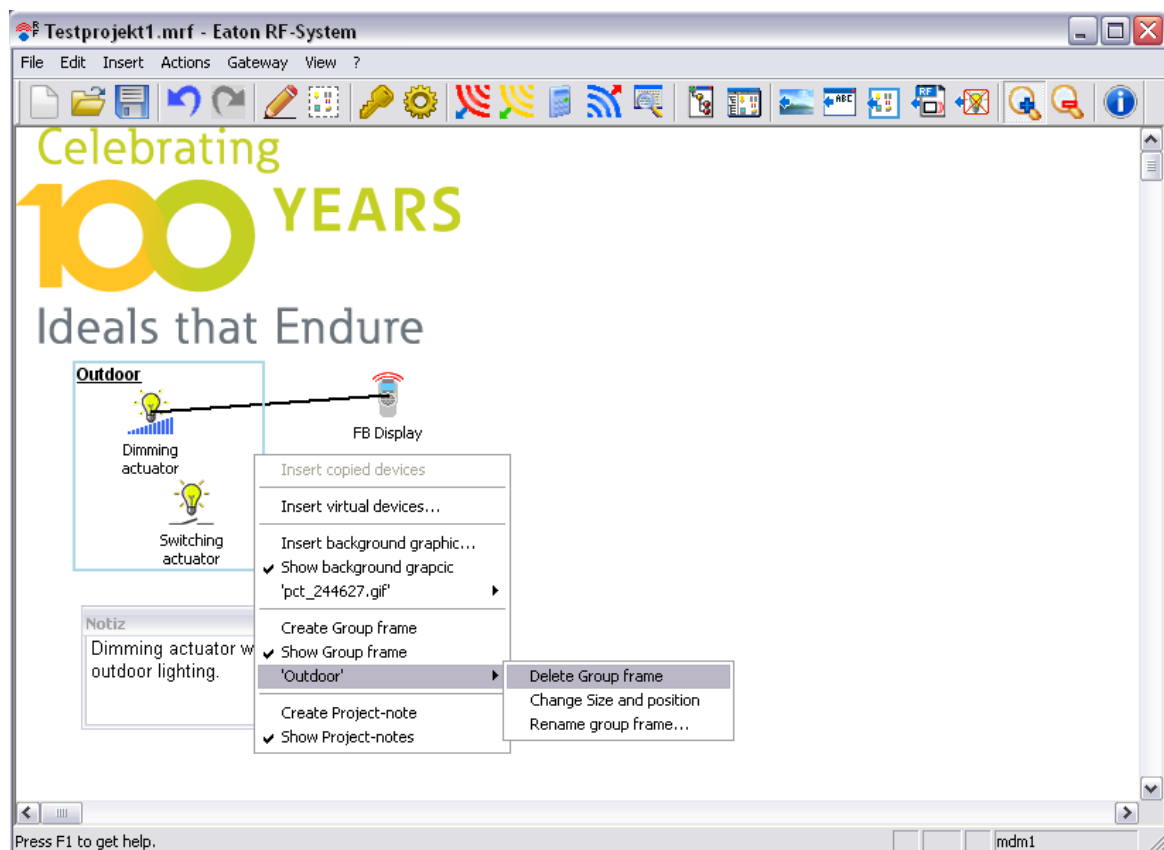
The function **Insert group frames** can be executed in several ways:

1. Menu **Insert -> Group frames**
2. **Right-click on blank MRF workspace -> Create group frames**
3. **Tool bar ->** 

As with the selection mode, the function remains active until it is deactivated (menu re-selection of

Insert -> Group frames or using the tool bar -> )

After the frame has been moved (left-click and hold, then release in desired end position) the MRF will request the input of a frame title. A maximum of 21 characters are possible and at least one symbol must be used. Once you have confirmed with OK, the frame will be displayed.



By right-clicking in the workspace where one or more group frames are present, a pop-up menu will appear in which a frame and its title can be further edited using an expanded menu.

The following options are available:

- **Delete group frames:** Removes the selected frames from the project
- **Change size and position:** Unlocks the frame so that the size and position can be changed with the mouse; the frame is relocked by selecting this option again
- **Rename group frame...:** The title of the group frame can be edited

All group frames in the project can be shown or hidden by going to menu options **View -> Group frames** or by **Right-clicking in the workspace -> Display group frames**.

Insert MRF project

This function offers the option of inserting devices (incl. all settings) from an already-existing MRF project into your current project.

When doing this, the user can choose whether the devices are to be inserted as real devices or as virtual devices.

The following conditions must be present:

-) all devices in the project to be imported must be known and fully scanned (no question marks)
-) the project to be imported may not include any devices with the same serial number as devices in the current project (not with virtual devices)
-) the project to be imported must have been created with the same or an older MRF version than used in the current project

What is imported:

-) devices, their names and complete device configuration
-) all device connections to one another
-) all device reception qualities among each another
-) the position of the device in the workspace (when importing, however, one insertion point to which the device positions are to orient will be defined)

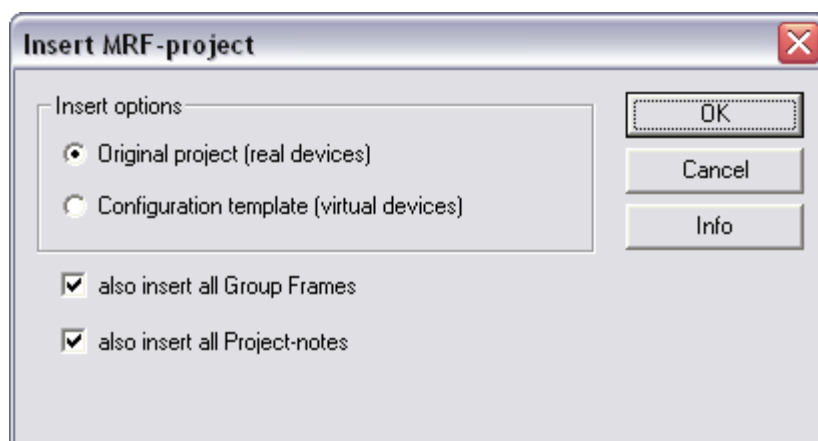
The project password will not be imported. All imported devices will take on the password for the current project!

The function **Insert MRF project** can be executed in several ways:

1. Menu **Insert** -> **MRF project**

2. **Tool bar** -> 

After the function has been executed, the insertion options will be displayed.

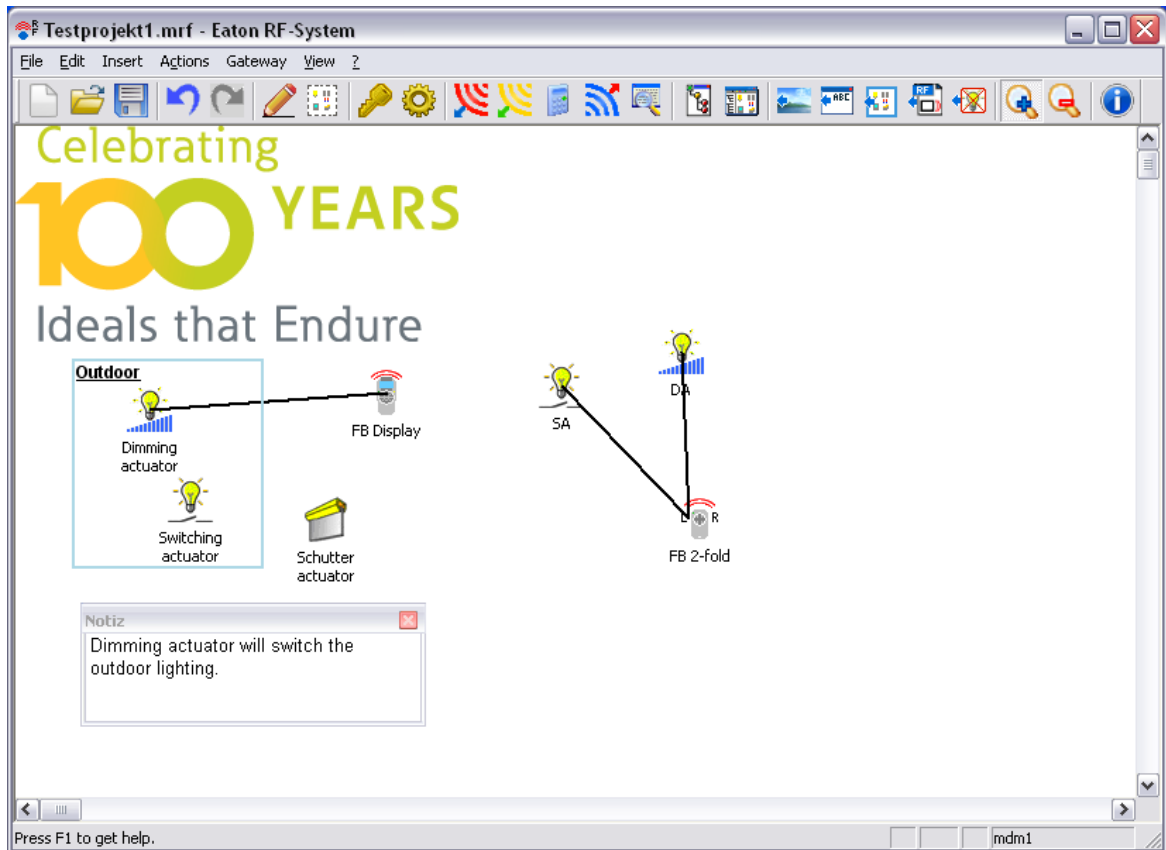


Here you can select whether the original project or a configuration template for the selected project is to be inserted, and whether group frames and project notes are also to be included.

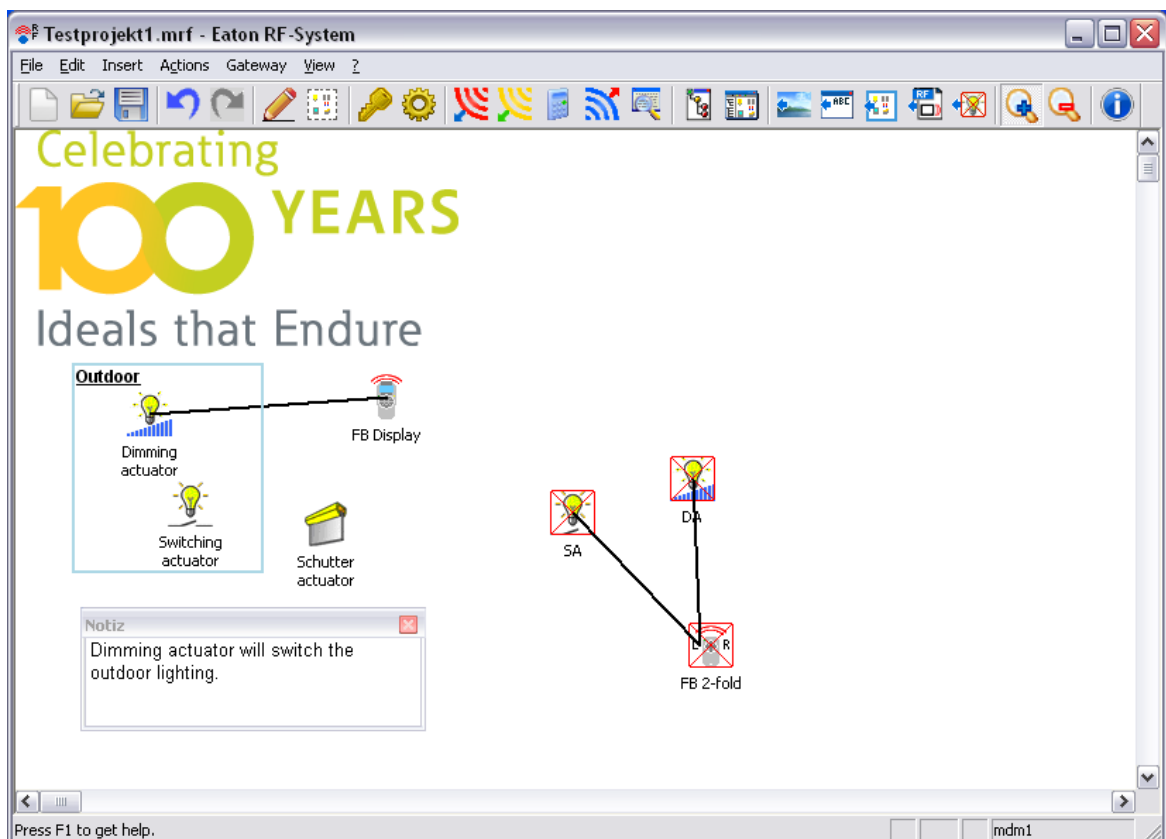
After confirming with OK and selecting the desired project, the MRF will ask for the screen positions into which the devices are to be inserted.

By left-clicking on the desired position in the workspace, the devices are inserted and the function is then concluded. The current project password will be adopted for all imported devices.

Insert original project: All devices in the selected project will be inserted very normally as real devices.



Insert configuration template: All devices in the selected project will be inserted as [virtual devices](#).




Insert virtual devices

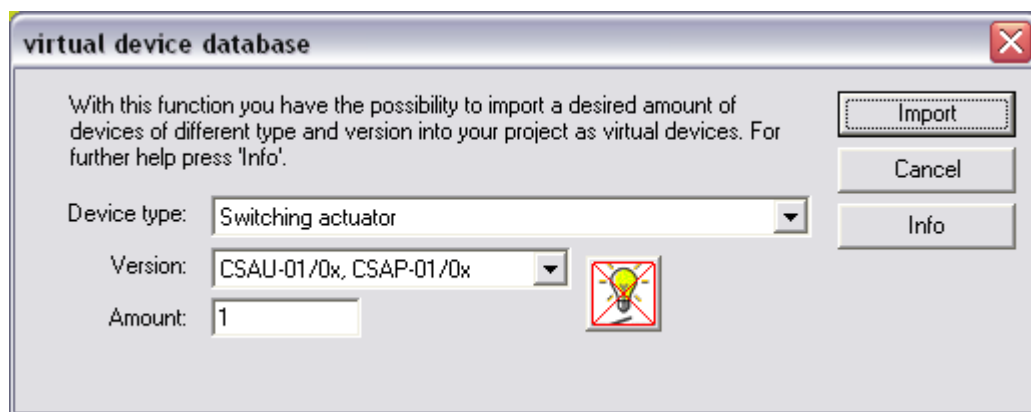
With this function, as many virtual devices of a selected type as desired can be inserted from a device database. Virtual devices are primarily configuration templates and can be handled like normal devices with the exception that loading and scanning are not possible.

With the function [Transfer Virtual Device Functions](#), the configuration of a virtual device can be transferred to a particular real device.

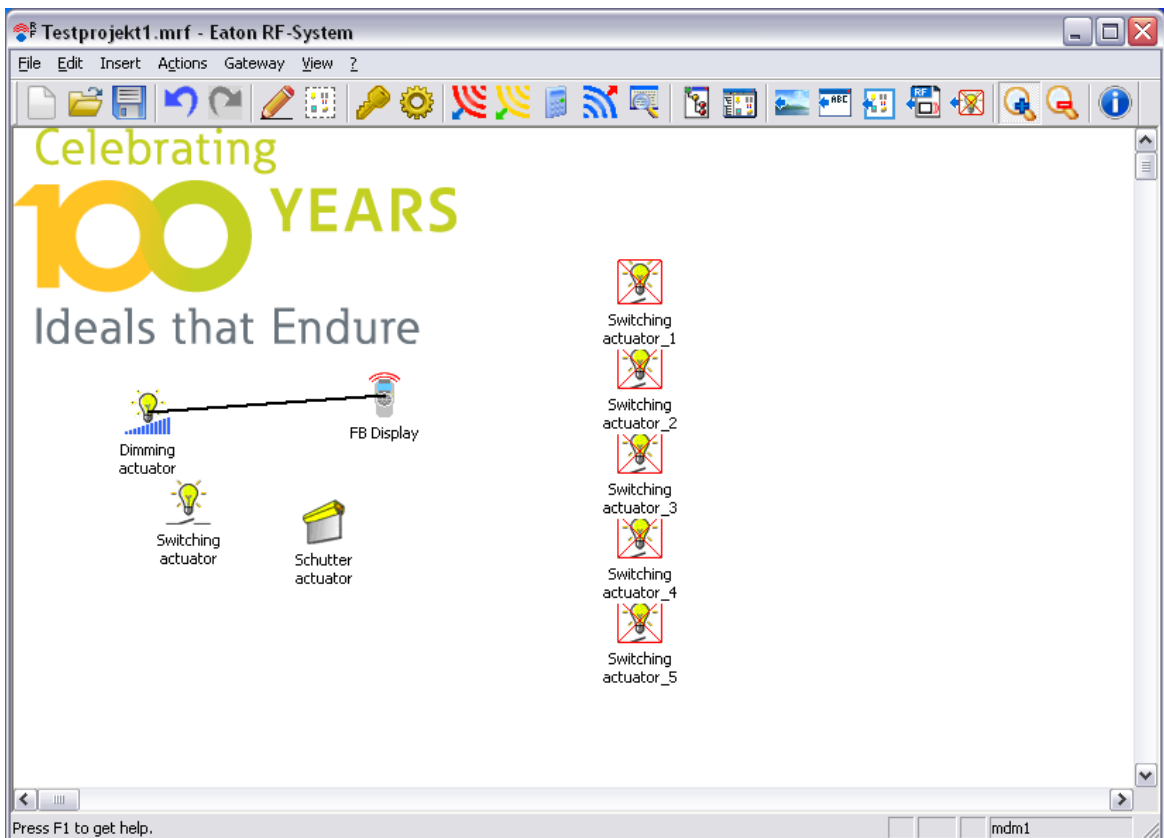
The function **Insert virtual devices** can be executed in several ways:

1. Menu **Insert -> Virtual devices...**
2. Right-click on blank MRF workspace -> **Insert virtual devices...**
3. Tool bar -> 
4. Right-click on an area in the Project Topology window -> **Insert virtual devices...**

After the function has been executed, the Options window of the virtual device database will open up.



By pressing on 'Import', the specified number (max. 100) of virtual devices of the chosen device type and version will be imported into the project.




This function can be repeated as often as desired.

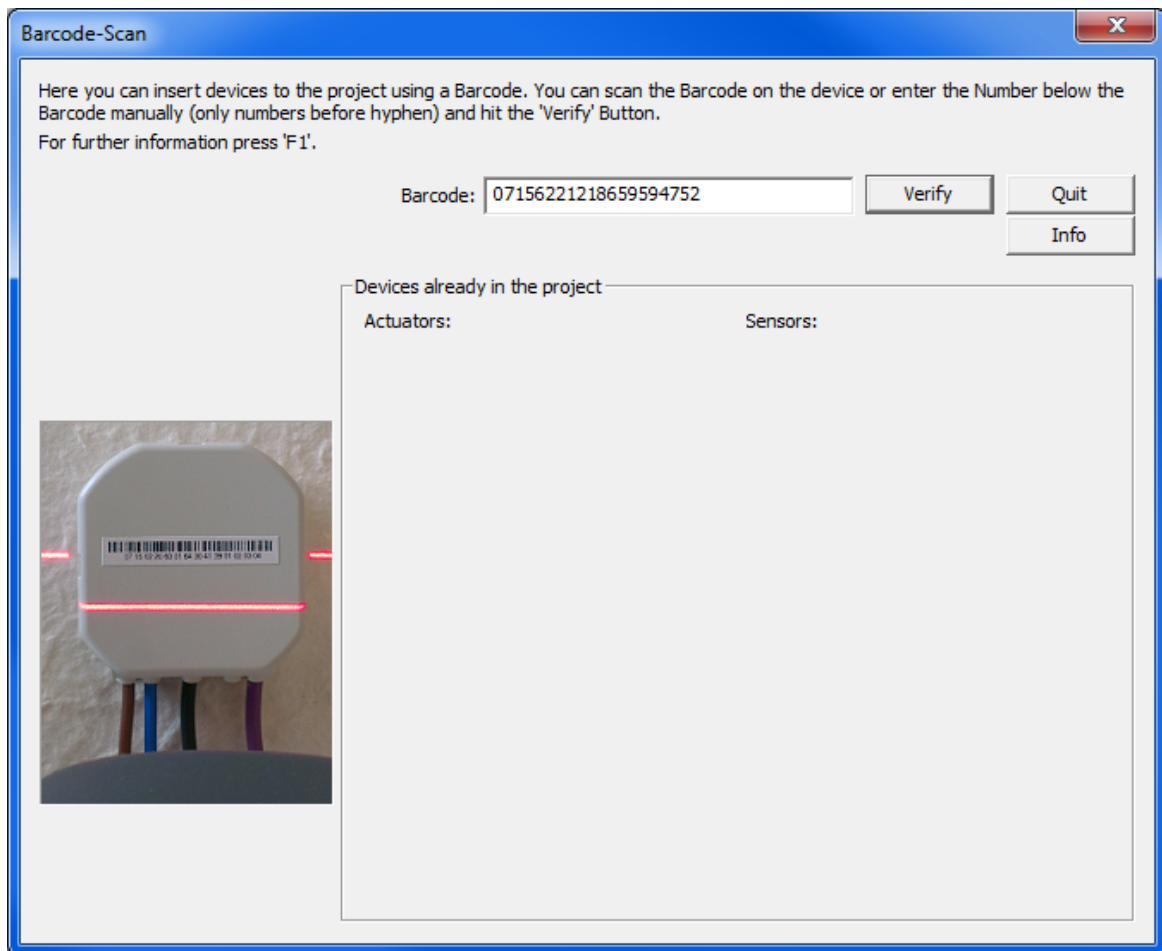
Insert devices by Barcode:

With this new function you can insert devices to a project simply by scanning a barcode stickered to the devices. The device then can be immediately configured and later only a scan of the reception quality and a short recheck of the device is necessary.



By clicking the Symbol  or navigating to 'Insert -> Device by Barcode' the function is executed and the following window will be displayed:

Barcode-Scan main window:



You have the possibility to scan the Barcode by a normal USB-Barcode-Scanner or to enter the Code-numbers manually to the entry field.

USB-Barcode Scanner:

Scan the Barcode of the desired device -> The Code will be checked after clicking on the 'Verify' button and if valid a new window with the device details will pop up.

Depending on the type of the used Barcode-Scanner the optimum reading distance between scanner and Barcode can vary slightly. It is recommended to read the operation manual of the Barcode-Scanner before use. It is also helpful to configure the Barcode-Scanner in a way that it will add a Tabulator sign after a data scan. In that case pressing the 'Verify' button would no longer be necessary and the Barcode would be checked automatically and the window of the device details will pop up.

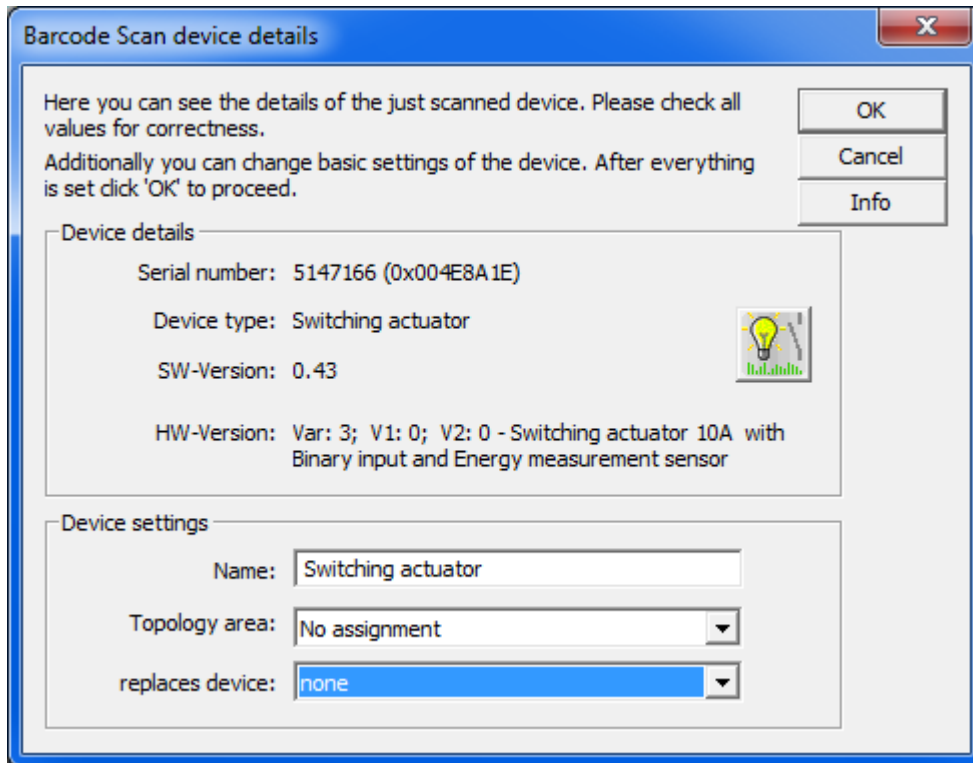
Manual entry:

Enter the numbers (before the -) on the Barcode-Sticker without any spaces in the Barcode field and press the 'Verify' button when you are finished -> If the Code is valid a new window with the device details will pop up

By pressing the 'Quit' button the Barcode-Scan function will be exited
By pressing 'Info' or hitting F1 this help window will be displayed

In the area 'Devices already in the project' you can see an overview of already scanned devices (by Barcode or normal scan)

Barcode-Scan Device details:



After the positive check of a Code this window will appear and inform about the details of the just scanned device.

All details (serial number, device type, Software-Version and Hardware-Version) of the device that results from the Barcode will be displayed and can be rechecked if correct.

Additional the following settings can also be changed:

Name – The name of the device can be edited (max. 21 characters)


Topology area - If available the device can directly be assigned to a Topology area

Replaces device – A virtual or real device can be selected that will be replaced by the scanned device. Already changed settings to the selected device will be transferred (the selected device will be removed of the project)

After the desired settings have been made clicking ,OK' or pressing ,Enter' will proceed. The device will be inserted with the chosen settings and the Barcode-Scan function will be continued. Clicking 'Cancel' will return you to the Barcode-Scan main window without inserting the device.

Display of devices scanned by this function:

Devices that have been inserted by Barcode-Scan will be displayed with a special overlay symbol

() to identify them as such. Unless the real device is checked (short scan of the device property by RF – done automatically during a Scan or Load procedure) the symbol will remain this way. If this check has been passed successfully the device symbol will be changed to normal and the device can be loaded.

Commands of the Actions Menu

The **Actions** menu includes the following commands:

[Scan](#)

[Scan reception quality](#)

[Recalculate all connections](#)

All components are scanned via RF

Scans the reception quality of all devices in the project (Professional version only)

Recalculates the connections (best routing paths) of all devices

[Recalculate Resenders of old Status connections](#) Recalculates the Resenders of old Status connections

[Load](#)

Modified configurations are loaded into the devices via RF

[Reset all devices...](#)

Resets all components to their delivery state

[Load all devices...](#)

Reloads all devices with a full set of data

[Display Traffic](#)

Opens the on-line monitor of RF telegrams

[Define Project-Topology...](#)

Possibility to create or edit diverse areas in the project

[Create manual Routing](#)

Creates a connection by manual drawing the routing path

[Replace device](#)

You can replace defective devices with new ones

[Transfer virtual device](#)

Transfers the function of selected virtual devices to

[funtions...](#)

real devices

Scan

The reception area is scanned for Eaton RF products only when connected to the [Gateway](#) (RS232 Interface)

All scanned devices are displayed on the screen. If the devices are already configured all connections, configuration and also the desktop position are also scanned.

Advice: For a complete reflection of the project and all devices regarding the reception quality scan first all main supplied devices and after that all battery supplied devices. So it is assured that the [calculations](#) of connections and routing paths is always the best way.

When using Professional version you can scan the reception quality and the normal device data separately from each other.

After executing the function **Scan** the Options window for the [project settings](#) will appear, in which specific import options for the upcoming scan process can be defined.

After selecting the desired options and clicking on **Scan** the process is initiated.

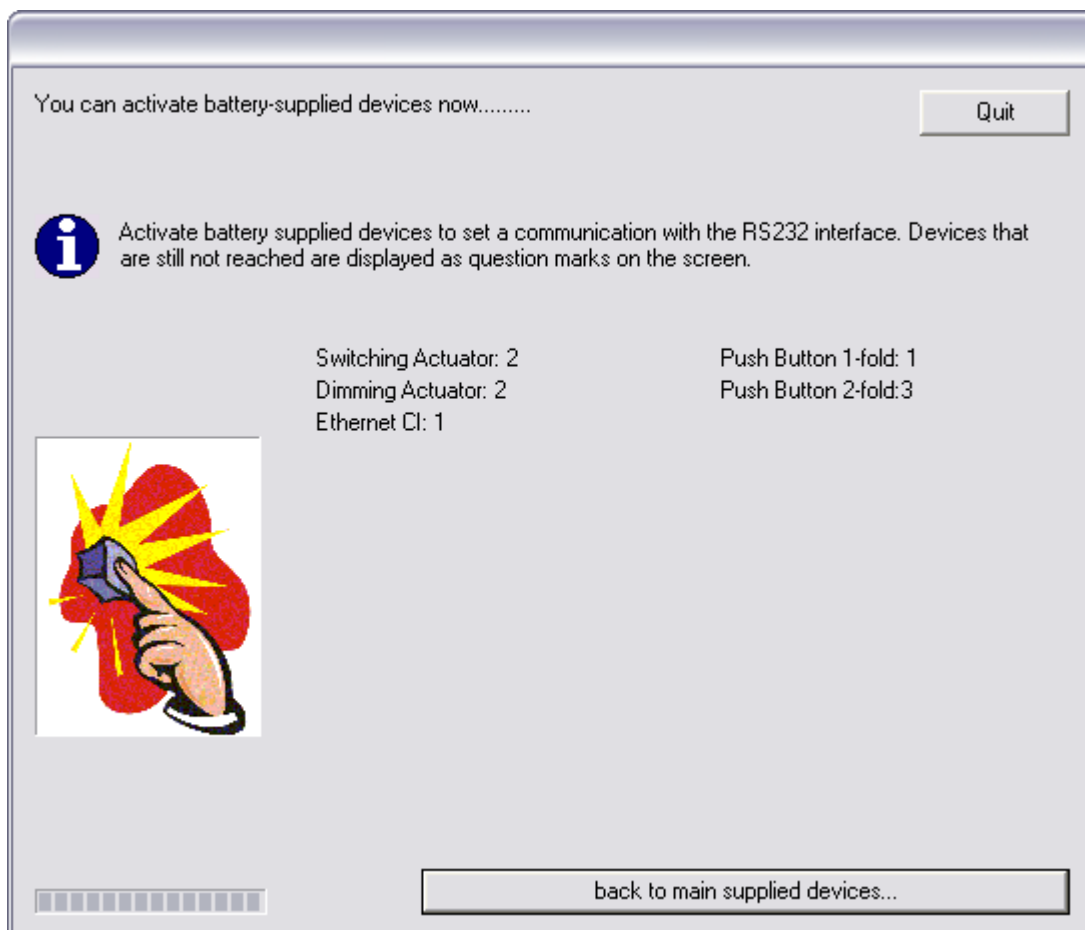


There are some main supplied devices already scanned how you can see in the part list and the reception area is scanned for further main supplied devices.



Data is being transmitted and if a new device is scanned it will be added to the part list.

New main supplied devices are scanned as long s you press the button „switch to battery supplied devices“. You can switch back to main supplied devices every time but it's not recommended to do so in the standard version (because all main supplied devices should be scanned first)



If you have scanned all desired devices you can click on the „Quit“ button. When using the standard version the reception quality is scanned and the clean up work is taking part. In the professional version if you do not scan the reception quality scanning will quit immediately.

When using the standard version some reception quality from the devices is also acquired in between.

The procedure is working cyclically if there is some time between the normal scanning. This is necessary and reduces the time for the clean up work.

Scanning the reception quality:

By using the new menu item (Actions -> Scan reception quality) the reception quality of all known devices can be scanned separately.

Scan reception quality

By using this command the reception quality of all devices on the screen are scanned.

Before you start this sequence you can select if you like to keep previous scanned reception qualities. If not all existing reception qualities are dismissed.

If you answer with “Yes” only new scanned reception qualities overwrites the old ones. The reception quality from devices that are not scanned stay.

Termination of reception quality scanning:

1. All reception tables of the main supplied devices are deleted – you have to reach all existing devices with the gateway in order to scan all reception qualities.

2. Step by step all main supplied devices sends out test messages – the other main supplied

devices notice how good or bad they understand every message. Depending on the number of devices and their software version 18 or 48 test messages are sent every cycle.

3. From every main supplied device the reception table is scanned. Depending on number and data in the devices this lasts different. Point 2 and 3 are repeated as often as the reception quality of every device is known exactly. In the end you have to activate battery supplied devices (so they can also send test messages). What device should be scanned or which you should activate you see in the list in the scan window.

The sequence ends automatically after the reception qualities of every device is known.

These function is only available in the professional version.

Recalculate all Connections

In case you have modified the built-in position of the devices in an existing system, this is where you have the possibility to recalculate all the connections after a [Scanning process](#), including the routing paths.

The calculation is based on the reception quality identified while scanning.

With each new connection you define in the [Connection Mode](#), the relevant Connection will automatically be recalculated.

In case you only wish to recalculate part of the paths, you can right-click the required connection and have this connection recalculated.

Load

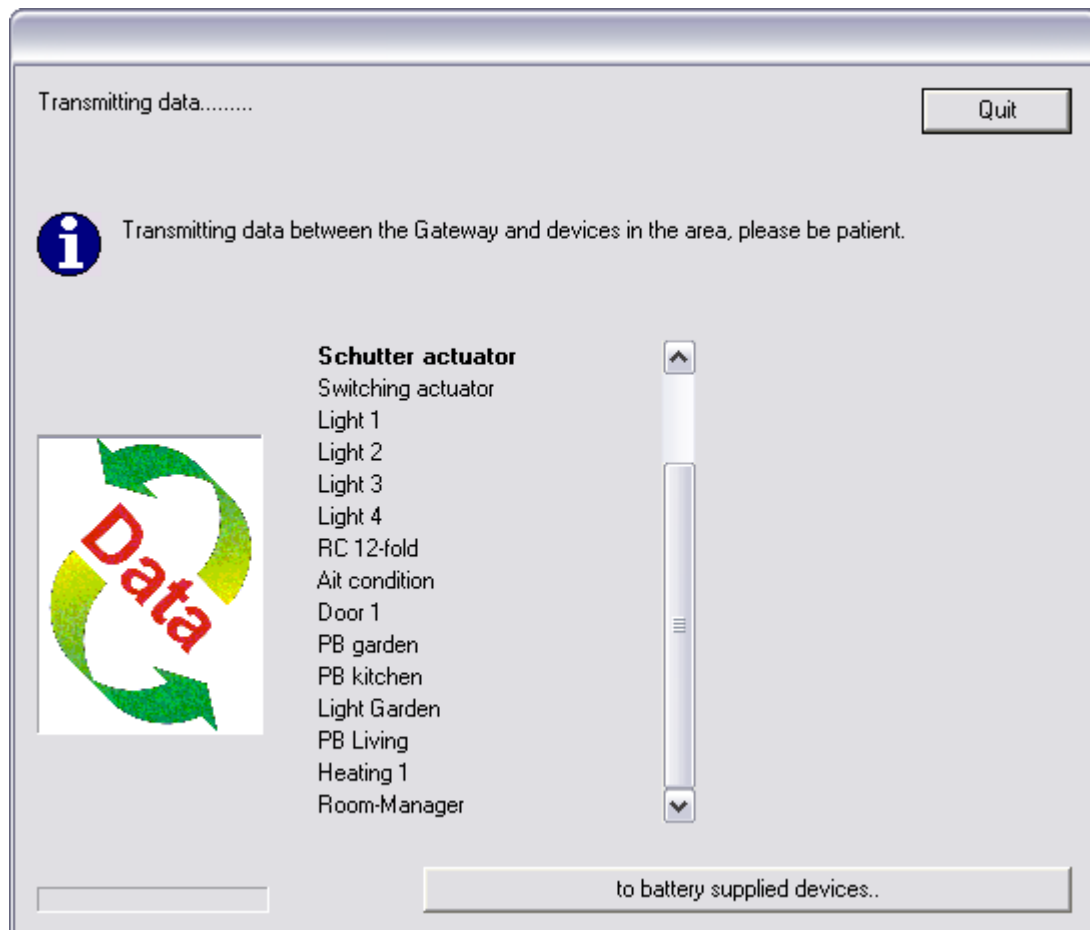
By using this command actual changes that has been made to the project can be loaded into the devices.

Either when clicking on the symbol  or the menu item (Actions -> Load)

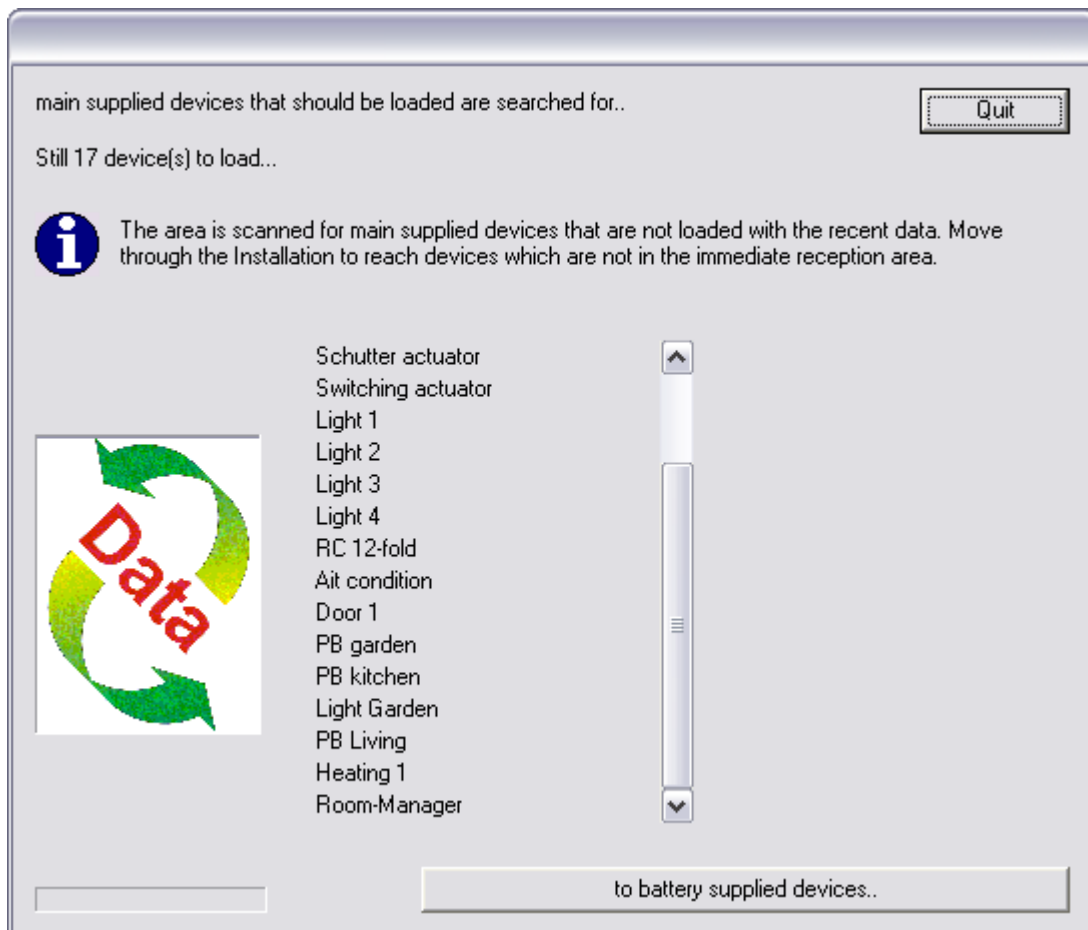
When loading the main supplied devices are loaded first and afterwards all battery supplied devices have to be activated.

The sequence of the loading process is not important. By using the buttons “to battery supplied devices” and “back to main supplied devices” you can switch while moving through the project.

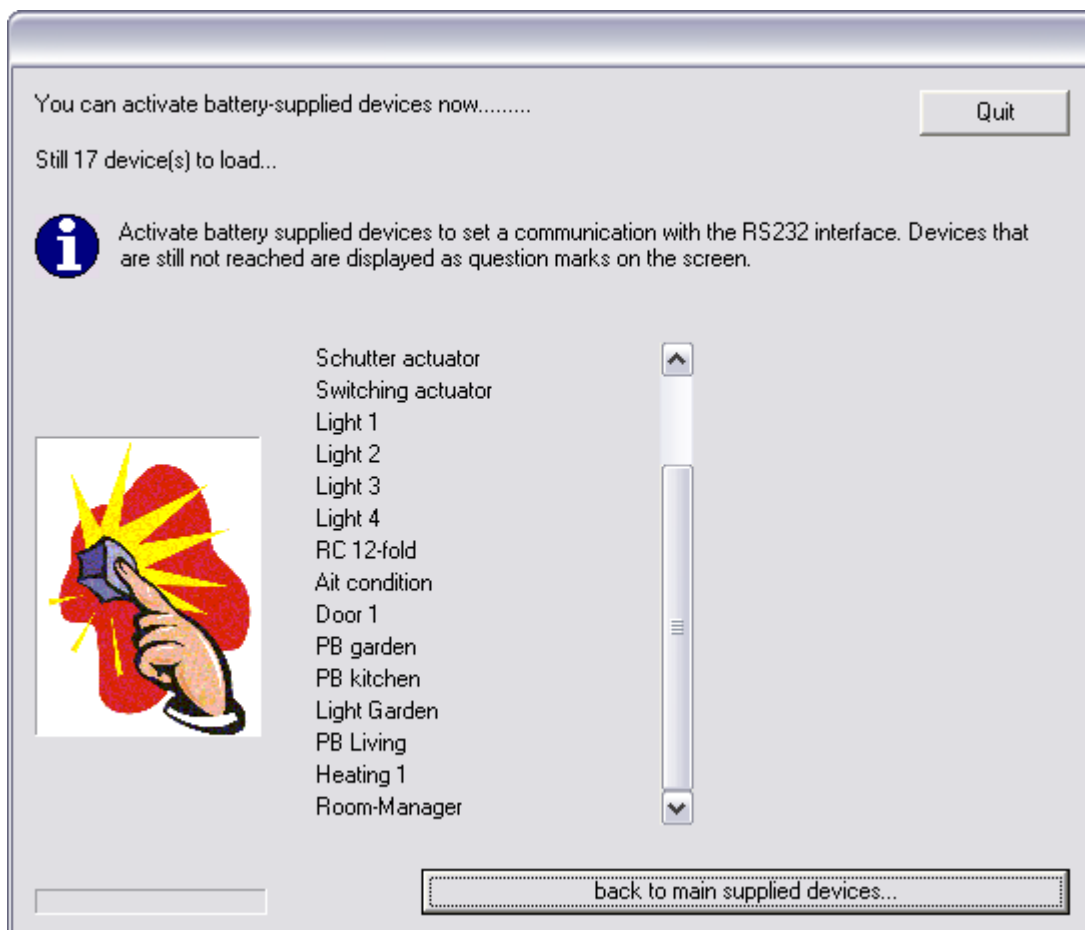
A simple list shows what devices has to be loaded.



The program tries to load one device after the other. The list will help you to see the progress. The name of the device that is currently loaded will be bolded. You can scroll through the list at any time to see which devices are still waiting to be loaded. If there are no more devices reached from your actual position you have to move through the project.



All devices that must be loaded are additionally displayed as question marks **?**, but keeps their name. After the device has been loaded the symbol is shown normal again.



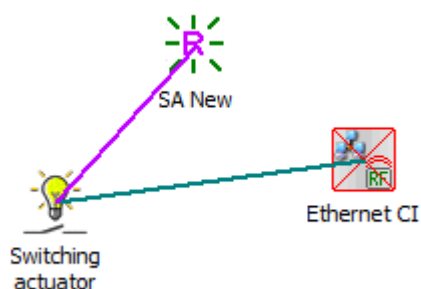
Recalculate Resenders of old Status connections:

With this function you can recalculate resenders of old status connections that cannot be sent directly from an actuator to an intelligent device. All actuators of the new generation (actual Switching actuator 10A/16A and Router from SW-Version 9.3) will support this function. Without such devices the function cannot be used.

Depending on the result of the calculation the user will be informed whether resenders have been found for all status connections or not and for what status connections the result was negative. The user has then the possibility to deactivate the sending of the old status for these connections.

This calculation will also be executed when using the function „Recalculate all connections“

If you select Status-Details from a connection to an intelligent device you will see like in this case that the old status will be resended by ‚SA New‘.



Background of this function:

In earlier MRF versions the old Status message has only been sent by an actuator that was connected to an intelligent device if there was at least a reception quality >0% between the two devices (defined by the connection calculation in the MRF). Therefore it could have been possible that actuators that were switched by an intelligent device by routing never sent their status back.

Since Version 2.30 the sending of the Status of an old actuator can be activated independent of the reception quality using the option 'Send old Status message' in the configuration window of each actuator. If deactivated the status message will not be sent like in earlier versions when there was no reception quality between the devices. When activated the status message will always be sent. Per default this option is activated. The reason for this change is that new generation actuators and Routers can resend the old status message and forward it to intelligent devices if there is no direct connection possible (successful calculation of resenders necessary).

Reset all Devices

All the devices which are [scanned](#) and can be seen on the screen will be reset to the state at the time of their delivery.

All the parameterizations and assignments will be deleted. In case a [Password](#) has been allocated before, it will also be deleted from the xComfort devices.

The devices will be reset to the state at the time of their delivery.

Load all Devices


This command re-loads the complete configuration into all the devices.

This option can be used, for example, if any modifications have been carried out later and you want to make sure that **all** the devices will be loaded with the **complete** data, whether any modifications have been made to the individual devices or not.

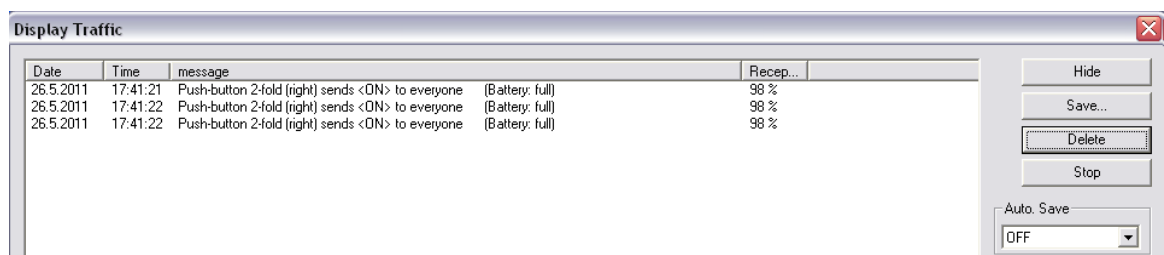
Specific info what happens while loading a device you can find [here](#)

View Traffic

The command View Traffic opens a window that displays messages (commands, data) transmitted via radio-frequency.

You will find this command under menu item *Actions* and *View Traffic* or by left-clicking the  symbol.

The window is set up the following way:



Line: Shows the line number for a message in the RF-monitor

Time: Shows at what time a message (command, data) has been sent.

Time difference: Shows the time difference to the previous message

Message: Shows the message (command, data) as text, e.g.: *Double Push-button (right) sends <ON> to Shutter Actuator*

NEW for 1.47:

You can now see the reception quality of all telegrams received on the right. This shows how well the gateway has understood the telegrams from the individual devices and does not relate to the reception qualities between the devices.

NEW for 1.53:

In 'Auto. Save' you can set if the received RF commands will be saved after a defined period of time in a TXT-document. You only have to define a filename and a folder where it should be saved. When saving cyclically a timestamp will be added to the filename automatically. Possible time intervals: every hour, every 6 hours, every 12 hours, every 24 hours

After the file has been saved cyclically the list of received RF commands will be cleared.

New with 2.0:

With every telegram received, information will be displayed on the battery status (full, almost full, average, weak, and empty) and/or whether the device is powered.

New for 2.30:

Now also system- and configuration-messages will be displayed to have better analyzation possibilities.

Command buttons:

Hide: Closes the monitor and returns to the MRF main window.

Save...: The messages (data, command) can be saved as text in a (*.txt) file.

Delete: Deletes all data recorded

Stop: Stops viewing the traffic of messages

Define project topology

The project topology serves to divide your project and the devices therein included into separate areas. Whether the areas are building sections, rooms, floors, etc. is left up to the user's discretion. Overall there are 3 different area levels (levels 1 - 3). The clear identification of an area takes place over area indexes (0-255 per level).

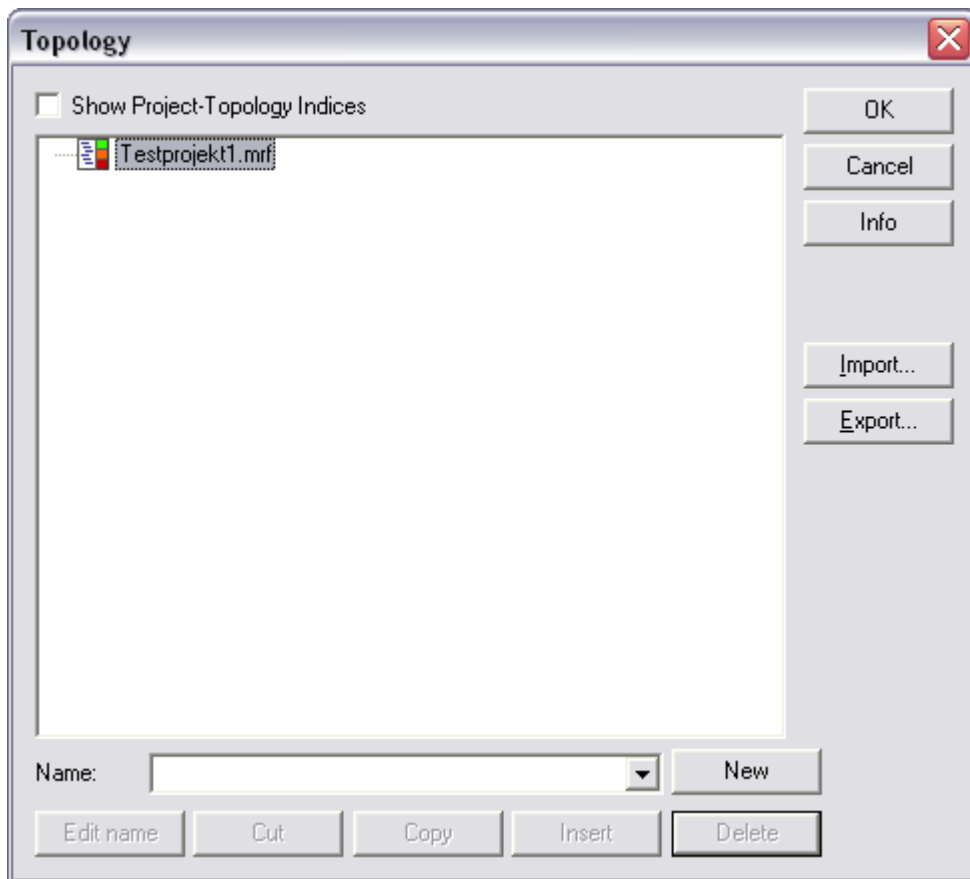
For example, if there are devices in the main project that have not been assigned to a special area, they have the index 0.0.0.

The function **Define project topology** can be executed in several ways:

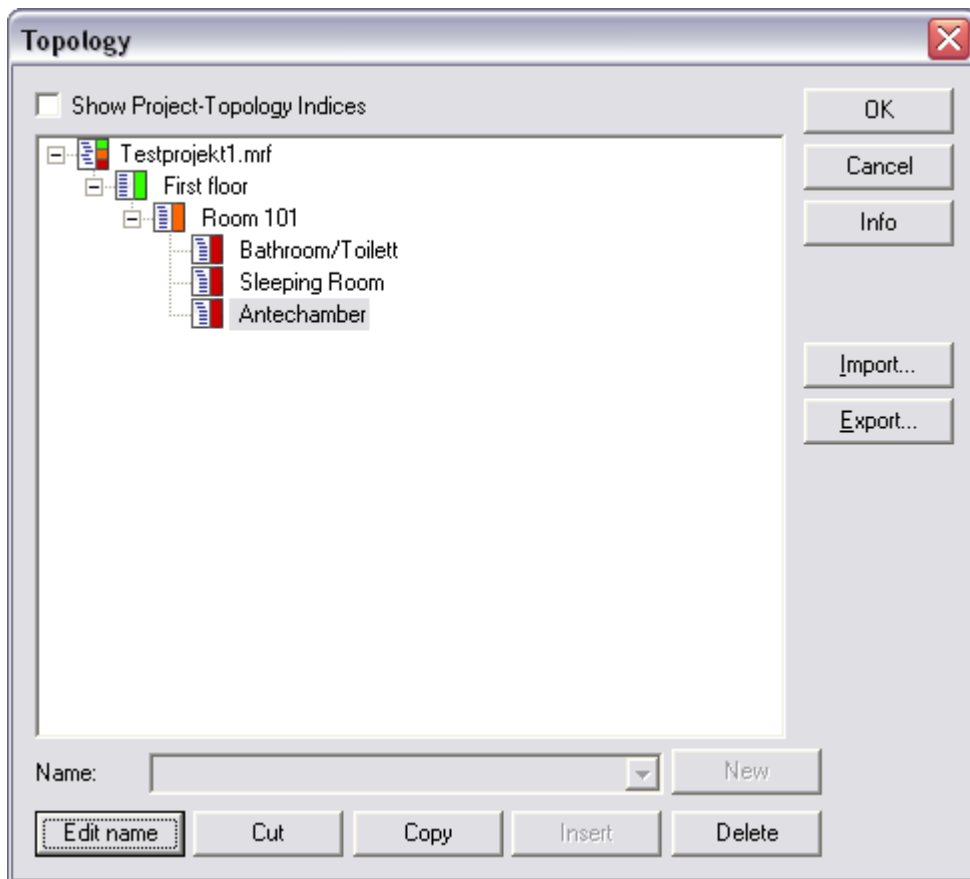
1. Menu **Actions** -> **Define project topology**

2. **Tool bar** -> 

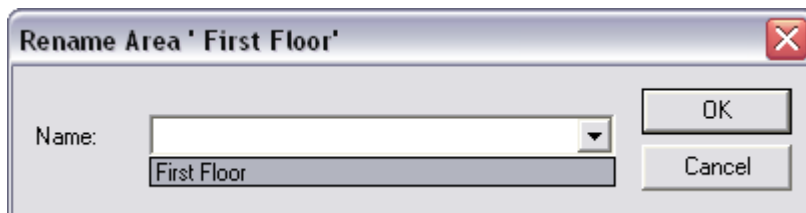
After the function has been executed, the Define Project Topology main window appears.



Test project1.mrf displays the project names. By selecting the project name, entering a name in the name field, and clicking on the **New** button, a new Level 1 area is created. By selecting a Level 1 area, entering a name and clicking on the **New** button, a new Level 2 area is created under the selected Level 1 area, etc.



By selecting on an existing area and clicking on **Rename**, an area name can be changed at any time. All area names for every level that you have ever assigned in MRF are saved in a file. If you now create a new area or wish to rename an existing one, you can make a selection from previously-assigned names.



With **Cut / Copy**, individual areas or areas with sub-areas can be copied or cut, and inserted into selected areas using the **Paste** button.

With the **Delete** button, the selected area and all sub-areas can be deleted from the project. Devices that are allocated to one of these areas will be set to **No allocation**.

The current project topology can be exported to a file using the **Export** button, to be able to reuse it in another project. With the **Import** button, an already-existing project topology can be imported into the current project. If a project topology is already present in the current project, it will be overwritten.

With the **OK** button, the just-defined project topology is adopted and becomes active.

The function can be repeatedly called-up at any time in order to effect changes in or additions to the project topology.

In order to work with the topology, the [Project Topology window](#) must be activated.

Devices can be allocated to an area by using **drag & drop** or the function **Assign topology** in the pop-up menu, in selection mode, for a group or for individual devices. As soon as a device has been allocated to an area, its area index will change in accordance with the new area. This information will also be loaded in the devices and thus will also be recognised upon rescan of the project.

The area allocation does not have a direct effect on a device itself. However, it is of importance to the MRF in connection with the calculation of the Ethernet routing, and produces enormous benefits for the overview of large projects.

Create manual routing

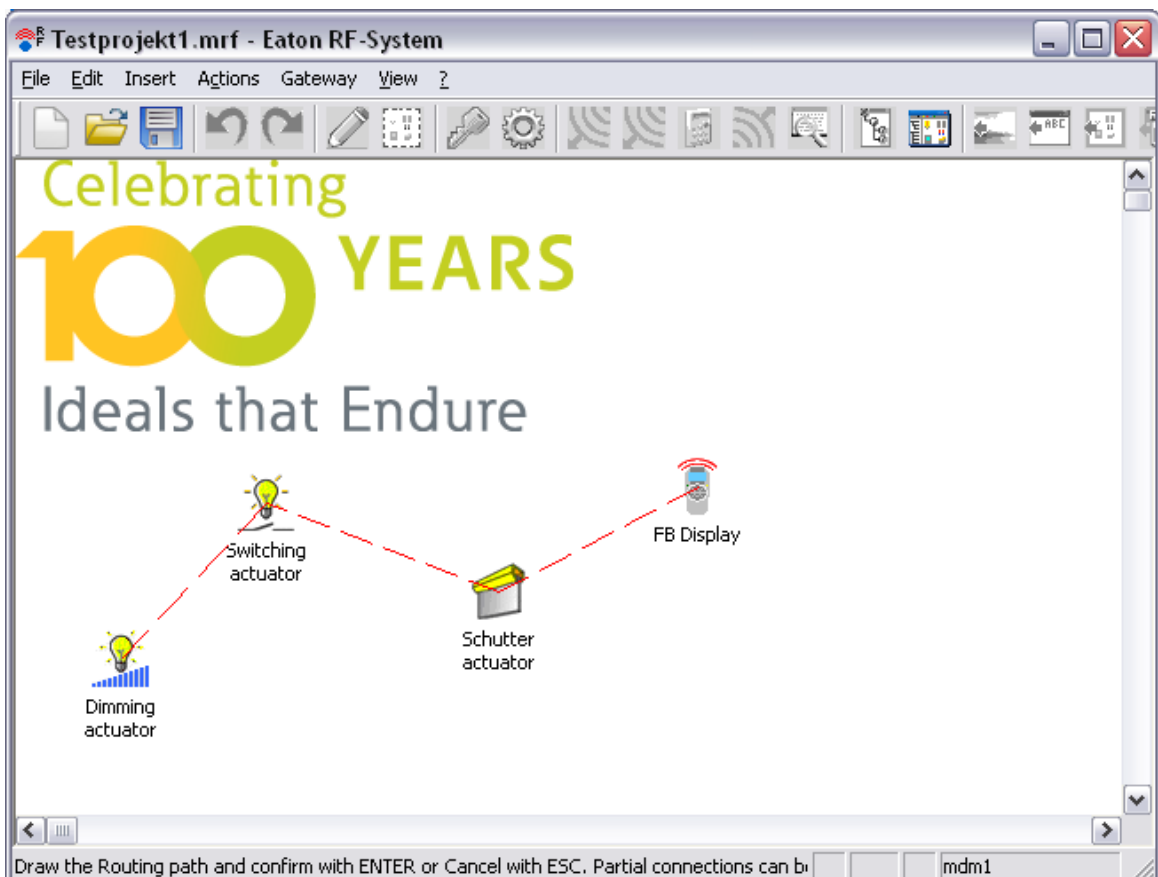
This purpose of this function is not to have MRF automatically calculate a connection, but rather to set-up a connection by drawing out the individual routing segments.

To be able to use this function, the option "Allow the use of manual routing" must first be activated in the programme options.

Following this activation, the function can be started by going to the menu options **Actions -> Create manual routing...**

CAUTION! It is recommended that this function be used only if you are fully familiarised with the routing behaviour of the Eaton RF system.

The first connection that is drawn must always originate from a sensor. Thereafter, routing segments can be arbitrarily drawn through actuators.

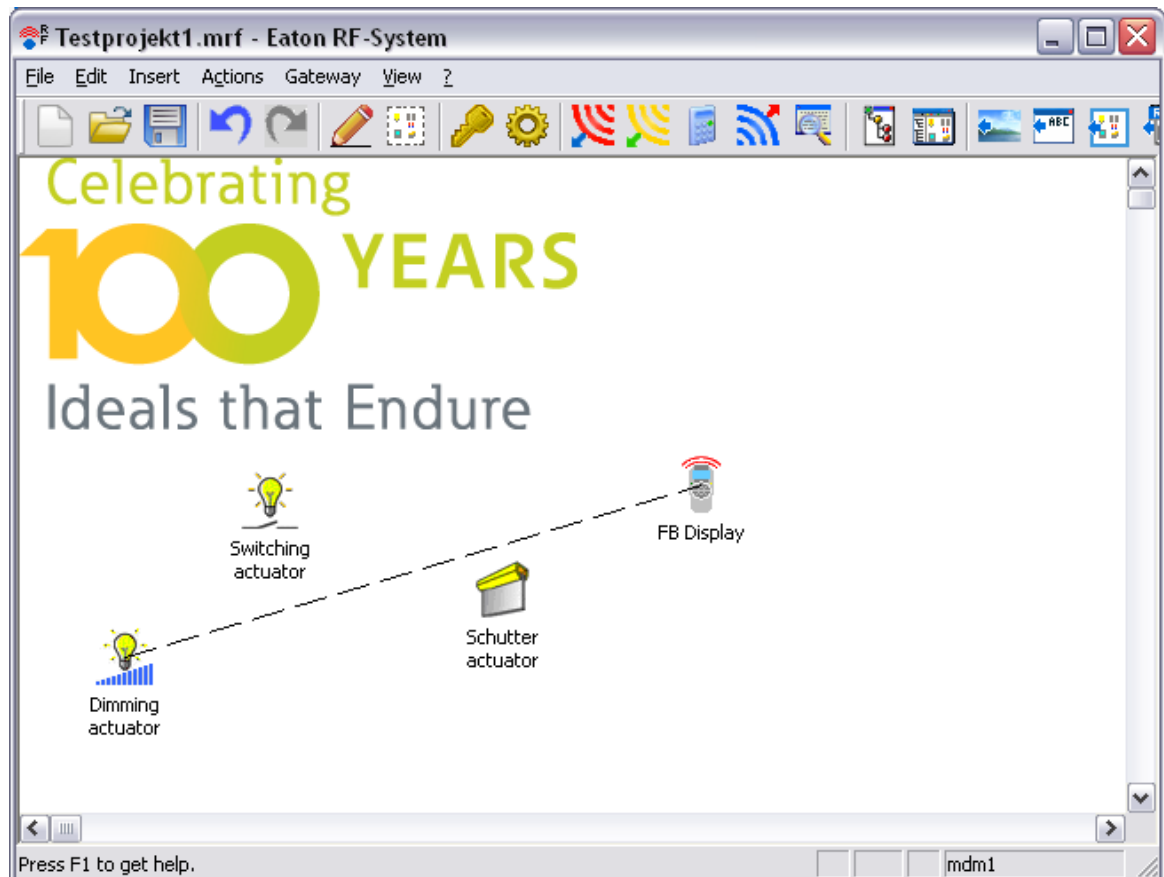


Drawn segments can be removed at any time by right-clicking on the line, or by aborting the function with the ESC key.

When you are finished drawing out the routing segments, confirm with ENTER. The MRF will now verify whether the connection can be set up or if MRF connection rules have been breached. If the verification is successful, one or more connections will be established (depending upon which segments were drawn) and a message will provide information on the number of

connections established.

A connection that was established using manual routing will always be displayed as a black dotted line



Only one connection with either automatic routing or manual routing may run out from a sensor channel, never a mixed connection.

You can have MRF recalculate at any time a connection that was set up with manual routing. In this manner, it loses its manually-entered path and the MRF attempts to calculate the routing under consideration of the reception quality.

If you need to draw out the manual routing from a multi-channel sensor, you must select the respective channel after pressing ENTER. The possibility that you have to select the sensor channel multiple times (for each of the resulting connections) is possible if multiple connections are set up as a result of the drawn-out routings.

Replace device

Using this function you can replace an existing device in the project by a new one. (f.E. if a device is defect). You have to scan the new device first. It has to be the same type of device like the old one.

Then you can start this function and follow the instructions on screen.

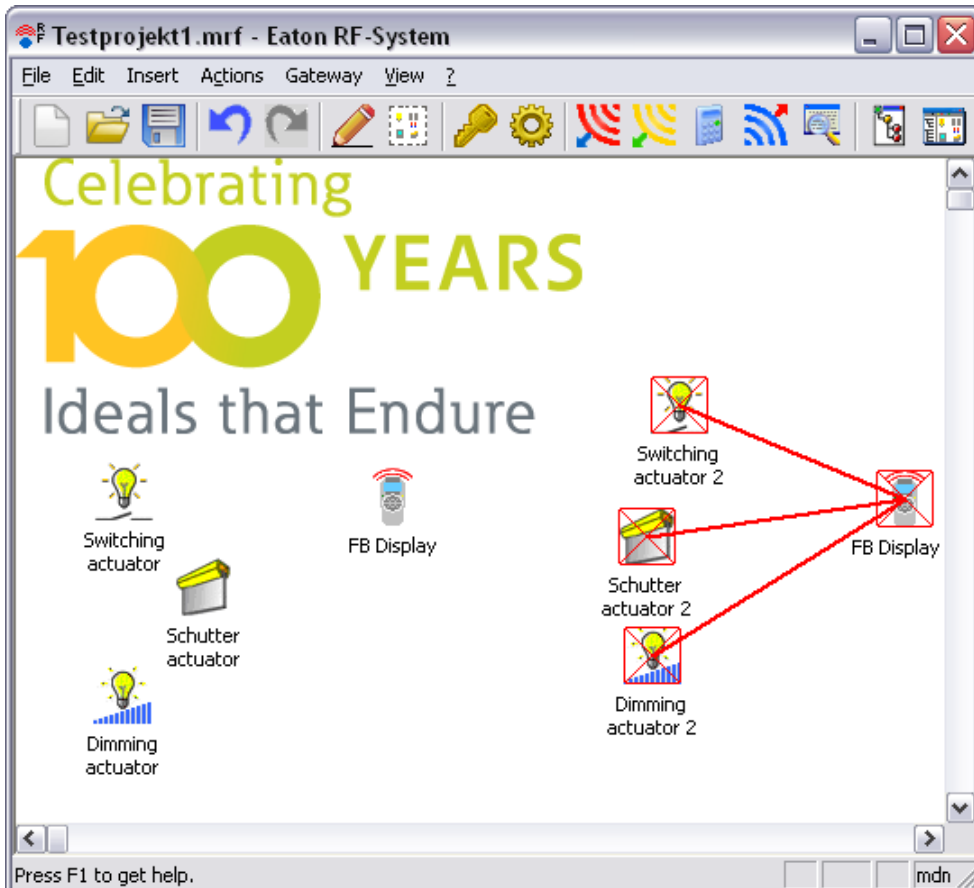
IMPORTANT!!! After clicking OK you should immediately click on the "Load" button or menu -> actions -> load.

Background: The old device is being removed from the screen and replaced by the new one. In all devices that had something to do with the old device the data entries are changed automatically.

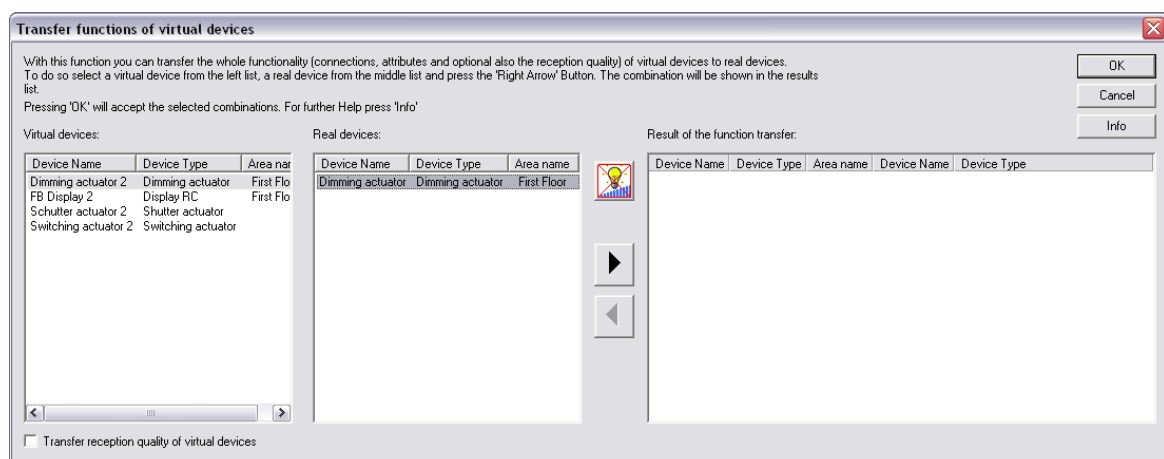
Transfer virtual device functions


With this function you can transfer all the settings and connections of [virtual devices](#) to real devices.

As a result, the virtual devices are removed from the project. At least one virtual device must be present in the project for this function to work.



This function can be executed through the menu options Action -> **Transfer virtual device functions...**

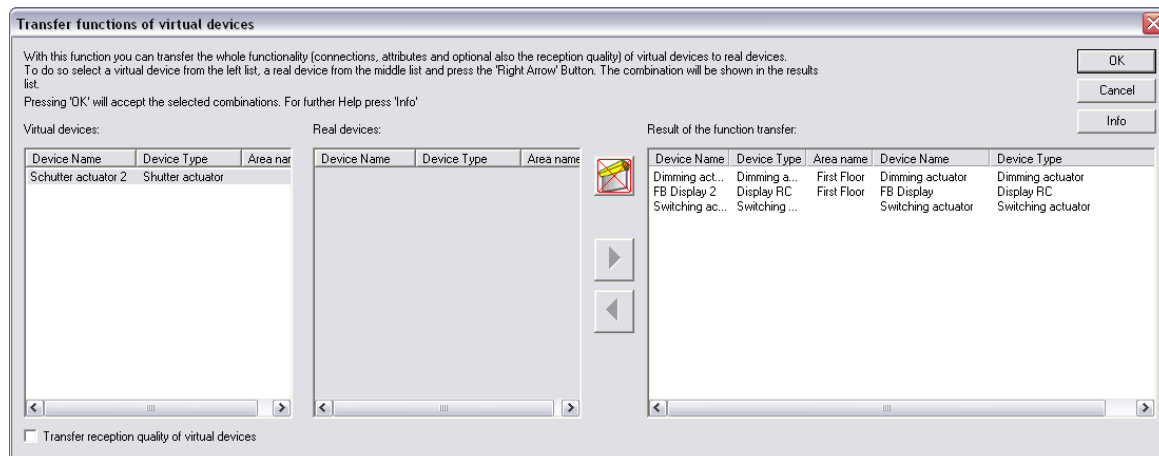


On the left-hand side you will see a list of all the virtual devices in the project. By selecting one virtual device, all real devices of the same or a compatible type will be displayed in the list of real devices (middle). As soon as one of the real devices is selected, the button  can be pressed.

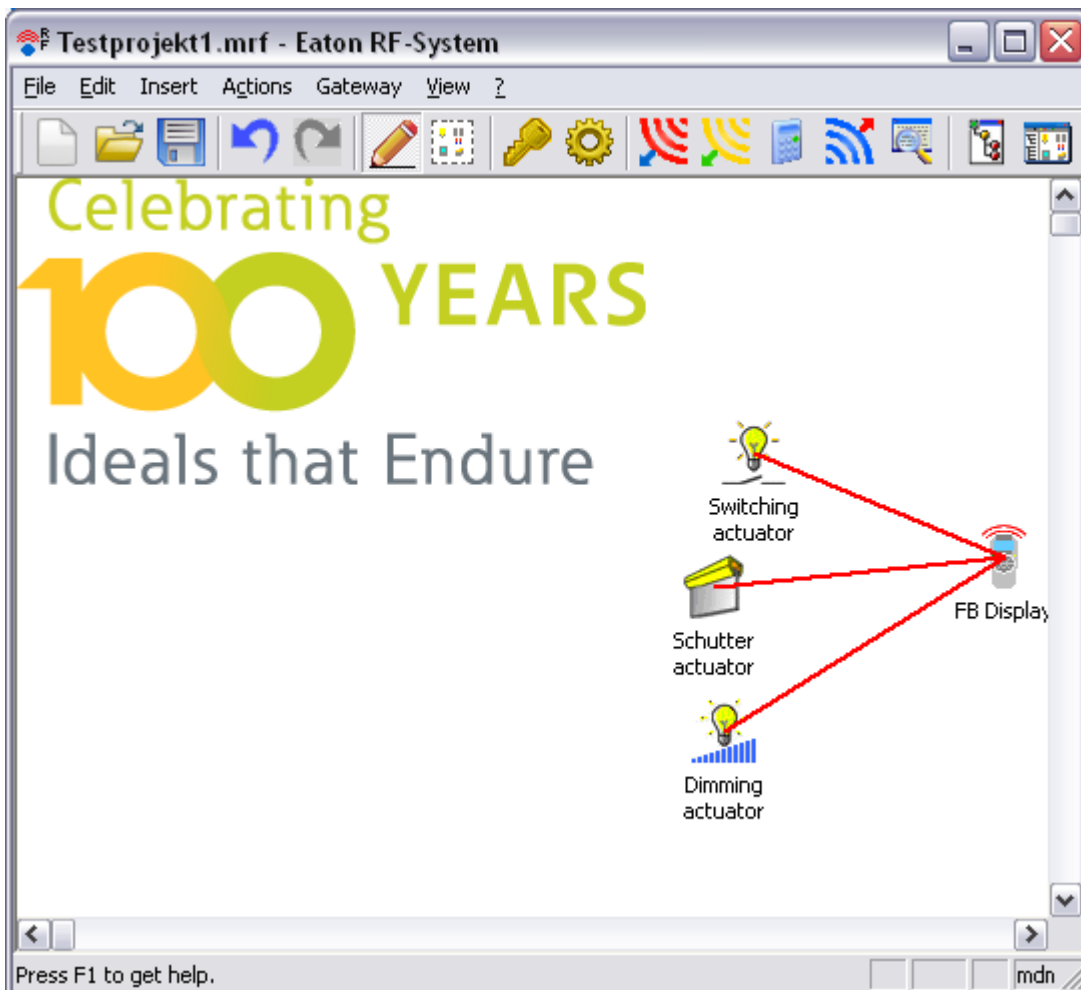
As a result, both devices will be linked with one another, removed from their respective lists, and the connection results will be entered in the list on the right.

You have the option to select a connection result and to delete it at any time by pressing the button. Both devices would then be returned to their respective lists.

With the option 'Transfer the reception quality of virtual devices' you can specify whether the reception quality of the virtual devices is to be adopted by the real devices. This is only recommended if the virtual devices possess significant reception quality (when they are imported from an existing project).



When you are finished with the transfer of functions, press the button **OK**. All connections that are displayed in the table 'Results of the function transfer' are now executed.



The real devices have now been assigned the functions of the virtual devices. They must be loaded together with the changes so that the transferred functions are adopted. The function can be executed as long as there are virtual devices in the project. In principle, it does not matter whether 100 devices are transferred at once or if the functions of individual devices are transferred separately.

For information: Similar to the function 'Replace device' the Bluetooth configuration of a Room-Manager with Bluetooth will not be transferred.

Commands of the Gateway Menu

The **Gateway** menu includes the following commands:

Go On-line	Connects the Tool (PC Software) to the RS 232 interface (Gateway)
Go Off-line	Disconnects the Tool (PC Software) from the RS 232 interface (Gateway)
Identify	Possibility to identify the connected USB-RF-Configuration-Stick
Software Update	Executes the software update process for the connected USB-RF-Configuration-Stick

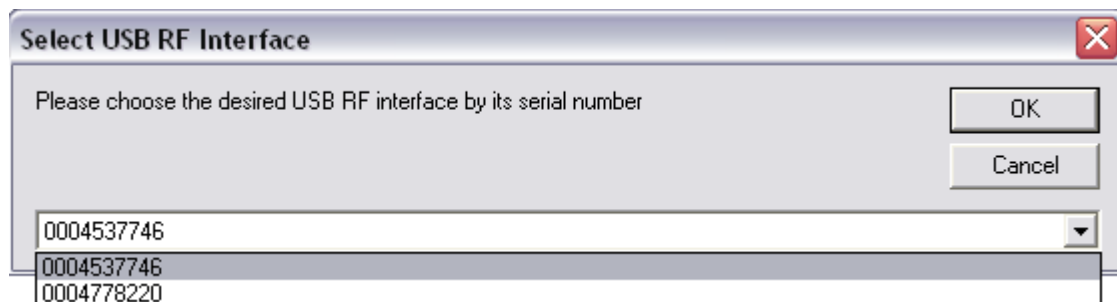
Go Online

With this command you can set up a connection to the Gateway (RS232 interface or USB-RF-Configuration-Stick). Usually this happens automatically when starting the program.

If you have connected the Gateway later or the connection has been cut, go to menu item *Gateway* and select *Connect* to establish the connection.

Note: In the menu item *Options* you can select which interface (USB, COM1, COM2...) the Gateway is connected to.

If more USB-RF-Configuration-Sticks are connected you will have the possibility to select the desired one by its serial number.



Also see [Gateway](#)

Go Offline

Use this command to disconnect the Gateway.

Go to menu item *Gateway* and select *Go off-line* to disconnect the Gateway.

Also see [Gateway](#)

Identify

Use this command to identify the connected USB-RF-Configuration-Stick. The orange colored LED on the device will blink for 10 seconds.

Software Update

Use this command to load a new software to the connected [USB-RF-Configuration-Stick](#).

For more details see [Software Update USB-RF-Sticks](#)

Commands of the View Menu

The **View** menu includes the following commands:

Toolbar	Hides or displays the toolbar
Status Bar	Hides or displays the status bar
Project Topology	Shows or hides the Project Topology window
Background graphic	Shows or hides the background graphic
Group Frames	Shows or hides the group frames
Project-Notes	Shows or hides the project notes

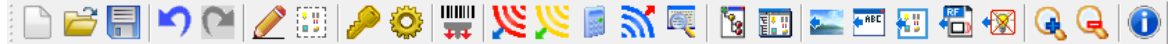
Toolbar Standard	Shows the standard tool bar
Toolbar Large	Shows the large tool bar
Zoom 100%	Zooms the workspace to 100% (full size)
Zoom 50%	Zooms the workspace to 50% (half size)
Unverified connections	Shows all drawn but not yet calculated connections
Connections for all devices	Shows all connections configured
Status-connections	Shows all status connections
Reception quality for all devices	Shows the reception quality of all devices
Display router	Displays all routers and their usage.

Toolbar

Standard:












Large:



The tool bar is displayed horizontally at the top, in the application window, below the menu bar. It provides quick access to important functions through the mouse.

In order to show or hide the tool bar you can select the command **Tool bar** from the **View** menu (ALT,A,S).

The MRF 2.0 version provides 2 different display formats for the tool bar (16x15 pixels and 24x24 pixels). You can switch between the 2 formats using the menu **View -> Standard tool bar** and the menu **View -> Large tool bar**.

Symbol	Description
	Opens a new document
	Opens an existing document. MRF displays the dialog box Open , where you can find and open the file you are looking for.
	Saves the active document or the active template under its current name. If you have not yet given it a name, MRF will display the Save as dialog box.
	Undoes the previous action
	Restores the last undone action
	Connection Mode : Changes into the connection mode
	Selection mode : Switches to selection mode
	Define password : Option to define a password
	Program options : Switches to program options



Einfügen eines Geräts mittels [Barcode-Scan](#)



[Scan](#): Scans all devices in the vicinity.



[Scan reception quality](#): Scans the reception quality of all devices.



[Recalculate all connections](#): Recalculates all connections



[Load changes](#): Loads the current configuration in the devices.



[Show RF monitor](#): Opens the show monitor window



Switches to [Define Project Topology](#) window



Shows or hides the [Project Topology window](#)



Adds a [background graphic](#) to the workspace



Adds a [project note](#) to the workspace



Switches to drawing mode for [group frames](#)



Imports the devices of an existing MRF project or only their properties into an actual project



[Imports virtual devices](#) from a database into the current project



Zooms the workspace to 100%



Zooms the workspace to 50%



Provides Information about the Eaton RF System

Status Bar



The status bar is displayed at the bottom margin of the xComfort MRF Software window. You can hide or display the status bar by the command **Status bar** in the **View** menu.

While you go through the menu using the ARROW KEYS, the left area of the status bar describes the function of the menu items. In this area you will also see a description of the effect the buttons in the toolbar have, provided you push and hold these buttons. If you don't want to carry out the command corresponding to a button in the toolbar after you've read its description, just release the mouse-button when the mouse pointer is no longer over that button.

In the areas right of the status bar you will see which of the following keys are locked:

Display	Description
UF	The LOCK KEY is activated
NUM	The NUM key is locked
RF	The SCROLL key is locked

The current project's password is always displayed in the area on the far right. If the display is blank, a password has not yet been defined.

Project Topology window

Activates/deactivates the window for the Topology View. In the process, a window to the left of the workspace will appear and display the current topology structure.

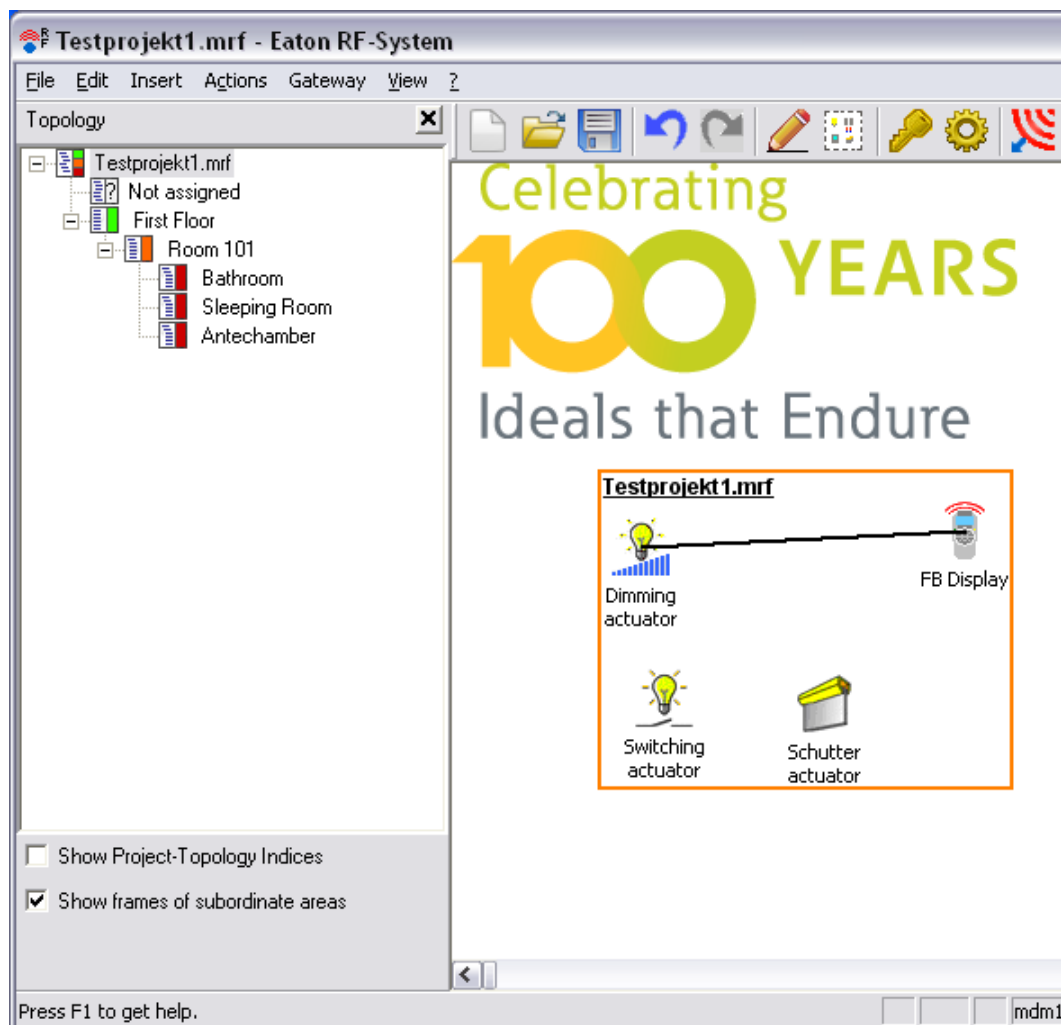
By right-clicking on the individual areas, the user can execute numerous new functions.

The **Project Topology window** can be activated/deactivated in 2 different ways:

1. Menu **View** -> **Project Topology**

2. Tool bar -> 

By activating this window, a new window appears to the left of the workspace.



The Project Topology window displays the area structure that was created with the Define Project

Topology function.

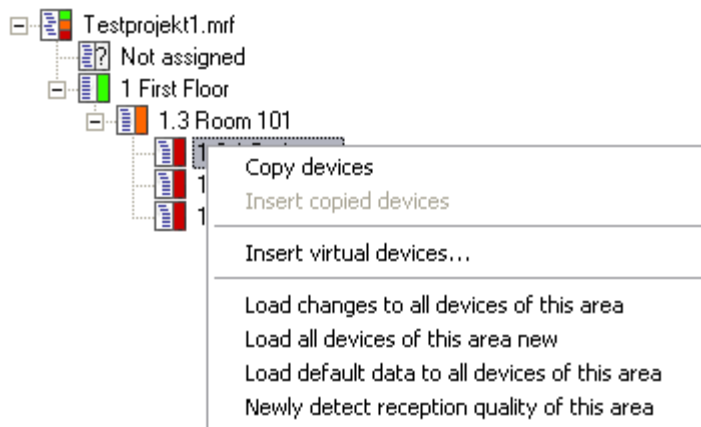
It offers the option of selecting individual areas (left-click). When a specific area is selected, more devices are displayed on the right-hand side of the workspace, than are present in this area and all sub-areas. If these devices are located far outside the currently displayed area, automatic scrolling to the device position will take place.

The standard selection is always the **Project name** and all of the project's devices are displayed. The area **No allocation** displays all devices for which a specific area has not yet been allocated.

In addition, there are 2 other activatable options for this view:

1. **Show area indexes:** If this option is activated, the index numbers for the individual areas will also be shown.
2. **Show framework of subordinate areas:** If this option is activated, an orange-coloured frame (incl. area name) will be shown surrounding all devices that are present in a subordinate area in the workspace, upon selection of an area. If the project name is selected, a frame will be drawn around all of the project's devices, upon activated option.

Pop-up menu area:



By right-clicking on an area in the Project Topology window, a pop-up menu will appear with the following new options:

- **Copy devices:** copies all devices in this area to the clipboard
- **Insert copied devices:** pastes the copied devices to this area as virtual duplicates
- **Insert virtual devices...:** Opens the window for the virtual device database in order to paste virtual devices in this area
- **Load changes to all devices in this area:** Loads the selected changes in all devices in this area
- **Load all devices in this area new:** Overwrites all devices in this area with the data in the MRF
- **Load default data to all devices in this area:** Loads basic setting in all devices in this area and reimports them
- **Newly detect reception quality of this area:** Re-establishes the reception quality of all devices in this area

When you are in your project's Ethernet communication interfaces, there is also the option to select one of these interfaces as Ethernet communications node for one area. This influences the calculation of connections in the MRF. All devices that are present in an area with Ethernet communications nodes, may only communicate with devices in other areas over Ethernet routing. The requirement for this purpose is, naturally, that the other areas also possess an Ethernet communications node or that an Ethernet node is available in a superior area of the project.

Background graphic

This function shows/hides the background graphic, if one is available.

The display of the **Background graphic** can be activated/deactivated in 2 different ways:

1. Menu **View** -> **Background graphic**
2. Right-click on blank MRF workspace -> **Display background graphic**

see also [Insert background graphic](#)

Group frames

This function shows/hides the group frames, if available.

The display of the **group frames** can be activated/deactivated in 2 different ways:

1. Menu **View** -> **Group frames**
2. Right-click on blank MRF workspace -> **Show group frames**

see also [Create group frames](#)

Project-notes

This function shows/hides the project notes, if available.

The display of the **Project notes** can be activated/deactivated in 2 different ways:

1. Menu **View** -> **Project-notes**
2. Right-click on blank MRF workspace -> **Show project-notes**

see also [Insert project notes](#)

Normal view (100%)

When activated, the workspace is zoomed to 100%. All device symbols, device names, connection lines, etc., are shown in normal size.

Zoom view (50%)

When activated, the workspace is zoomed to 50%. All device symbols, device names, connection lines, etc., are shown in smaller size.

The creation and the display of project notes is deactivated in this view.

No connections

When activated all connection lines will be hidden.

This can be helpful when moving devices because there can be a lot of connections that will cover some device symbols.

Unverified connections

Shows connections that has been drawn but not yet calculated successfully.

If the connections are calculated successful their colour changes to black.

Show all Connections

Displays all the connections or assignments of all devices carried out in the [Connection Mode](#) as a black connecting line.

Connections you selected before can be deleted or [recalculated](#) at any time by right-clicking the assignment you want. In this case only this particular connection will be deleted or recalculated.

Should you wish to see the assignments of a particular device, you can display the connections of this particular xComfort device by opening the [Drop Down Menu](#) of this device with the right mouse-button and by selecting the item *Connections*.

Shortcuts

Keyboard: F7

To display the connections of individual devices, please use the Drop Down menu.

Status-Verbindungen:

In this view all status connections of the project will be displayed.

A status connection is a back channel from an actuator that will send information about the output status back to a connected intelligent device.

There are two different types of status connections:

- Old Status connections
- New Status connection/extended Status message

Old Status message:

General Information:

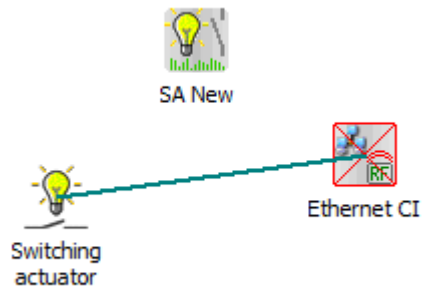
The old status message will be sent when an output status of any actuator of the old generation changes (Switching actuator, Dimming actuator, Shutter actuator, Analog actuator). This old status message will be sent to the first intelligent device in the actuator sensor list and cannot be routed and is also not repeated by the actuator.

In earlier MRF versions the old Status message has only been sent by an actuator that was connected to an intelligent device if there was at least a reception quality >0% between the two devices (defined by the connection calculation in the MRF). Therefore it could have been possible that actuators that were switched by an intelligent device by routing never sent their status back.

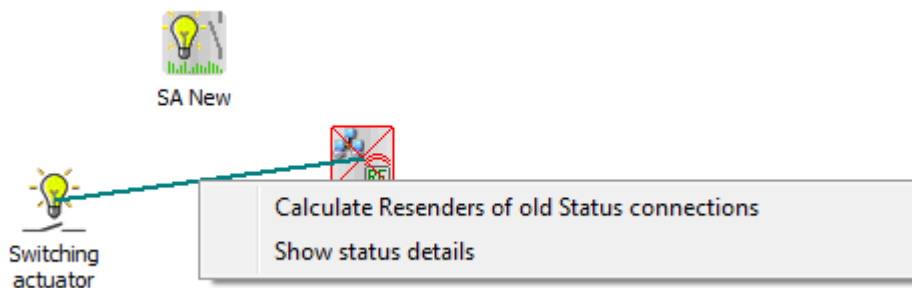
Since Version 2.30 the sending of the Status of an old actuator can be activated independent of the reception quality using the option 'Send old Status message' in the configuration window of each actuator. If deactivated the status message will not be sent like in earlier version when there was no reception quality between the devices. When activated the status message will always be sent. Per default this option is activated. The reason for this change is that new generation actuators and Routers can resend the old status message and forward it to intelligent device if there is no direct connection possible. The calculation of this special resend can be done either by using the function 'Calculate all connections', using the general function 'Recalculate resenders of old status connections' or right clicking a single status connection and selecting the option 'Recalculate resenders of old status connections'.

Display of old Status connection:

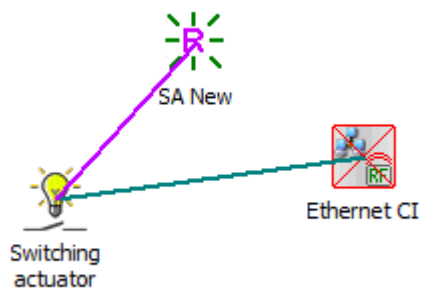
Selecting View -> Status connections will display all old Status-connections in dark turquoise color



Right clicking such a connection offers the possibility to show status details or to recalculate resenders of for the status connection



If you select Status-Details you will see like in this case that the old status will be resended by ,SA New'.



New Status connection/extended status message:

General information:

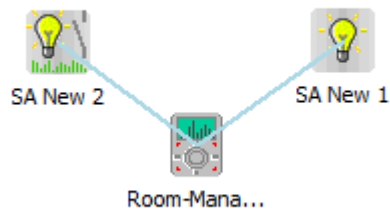
The new status connection is generally an own back channel from the actuator (new generation) to the intelligent device that supports this special channel.

The connection path can be direct or routed and is treated like a normal sensor -> actuator connection in the system (like from a pushbutton to a Switching actuator). The connection calculation will be done together with all other connections.

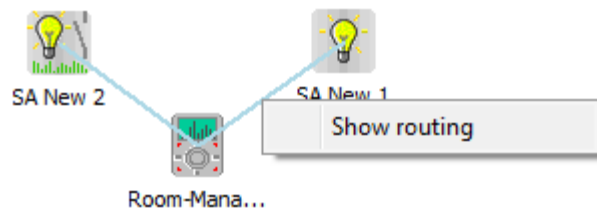
Also see [extended Status message](#)

Display of new status connection:

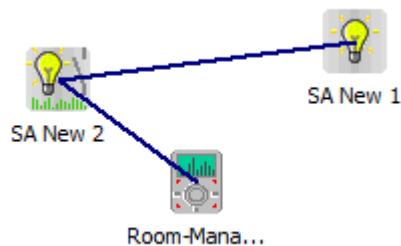
Selecting View -> Status connections will display all new Status-connections in light blue



Right clicking on a new status connection will offer the possibility to show the connection path like for any other connection



In this example the Status of ,SA New 1' will be routed over ,SA New 2' to the intelligent device.



Reception quality for all devices

Shows the inter-device reception quality.

The reception quality is depicted in coloured connection lines between the devices:

GREEN	very good RF-connection
ORANGE	satisfying RF-connection
GREY	inadequate wireless connection
none	very poor wireless connection or none at all

Should you wish to see the reception quality of a particular device, you can display the reception quality of this particular xComfort device by right-clicking and opening the [Drop Down Menu](#) of this device and by selecting the item *Reception Quality*.

NEW:

The ability to display inadequate reception quality is new. Reception quality lines which are shown in grey are too poor to be transferred successfully to telegrams, but are important as information for setting routers. In this case the reception quality is in a range which can just about be understood by the other device. If you place a router between the devices with a grey reception quality line, we can assume that a connection from the two devices to the router will work.

Use selection mode to display the reception quality of a specific group.

Shortcuts

Keyboard: F10


To display the reception quality of a particular device, please use the Drop Down menu.

Display router

It is possible to display routers. All devices which have routing paths entered are assigned a different icon (router icon). The colour of the router icon indicates router usage.

1-5 routing paths ->  green router icon

6-12 routing paths ->  orange router icon

13 routing paths ->  red router icon; In this case the Router is full if the device is an actuator of the old generation. Actuators of the new generation are at 50% maximum capacity.

You can also delete the reception quality between two routers in the router view. This may be helpful if there are two routers in the direct vicinity which have to share routing paths - in such a case it is better if the two routers don't understand each other.

A reception quality line between two routers can be deleted by right-clicking on a line and on the option "Disconnect router".

By clicking again on Menu -> View -> Display router, you can change this view again.

Enter topic text here.

Commands of the Help (?) Menu

The **Help** menu includes the following commands, which offer you support for this application:

Help Topics	Displays the list of topics help is available for
About MRF...	Displays the version number of this application

The Command Info (Help Menu)

Use this command to display the Copyright note and the version number of your Eaton RF system copy.

xComfort Devices

New:

[Switching actuator 10A/16A](#)

[Switching Actuator](#)

[Dimming Actuator](#)

[Shutter Actuator](#)

[Push-button](#)

[Binary Input](#)

[Room Controller](#)

[Temperature Input](#)
[Gateway](#)
[Home Manager](#)
[Analog actuator](#)
[Room-Manager](#)
[Motion detector](#)
[Communication interface](#)
[Analog input](#)
[2-fold remote control](#)
[12-fold remote control](#)
[Routing actuator](#)
[Impulse Input](#)
[Energy measuring Sensor](#)
[Remote Control with Display](#)
[Heating actuator](#)
[Room-Manager with Bluetooth](#)
[1-fold, 2-fold, 4-fold pushbutton](#)
[BOS/COS Interface](#)
[Pendant remote control](#)
[MEP-device](#)
[Ethernet CI](#)
[Radiator thermostat](#)
[Multi-Heating actuator](#)
[USB-RF-Communication Stick](#)
[Smart Home Controller](#)

Switching Actuator



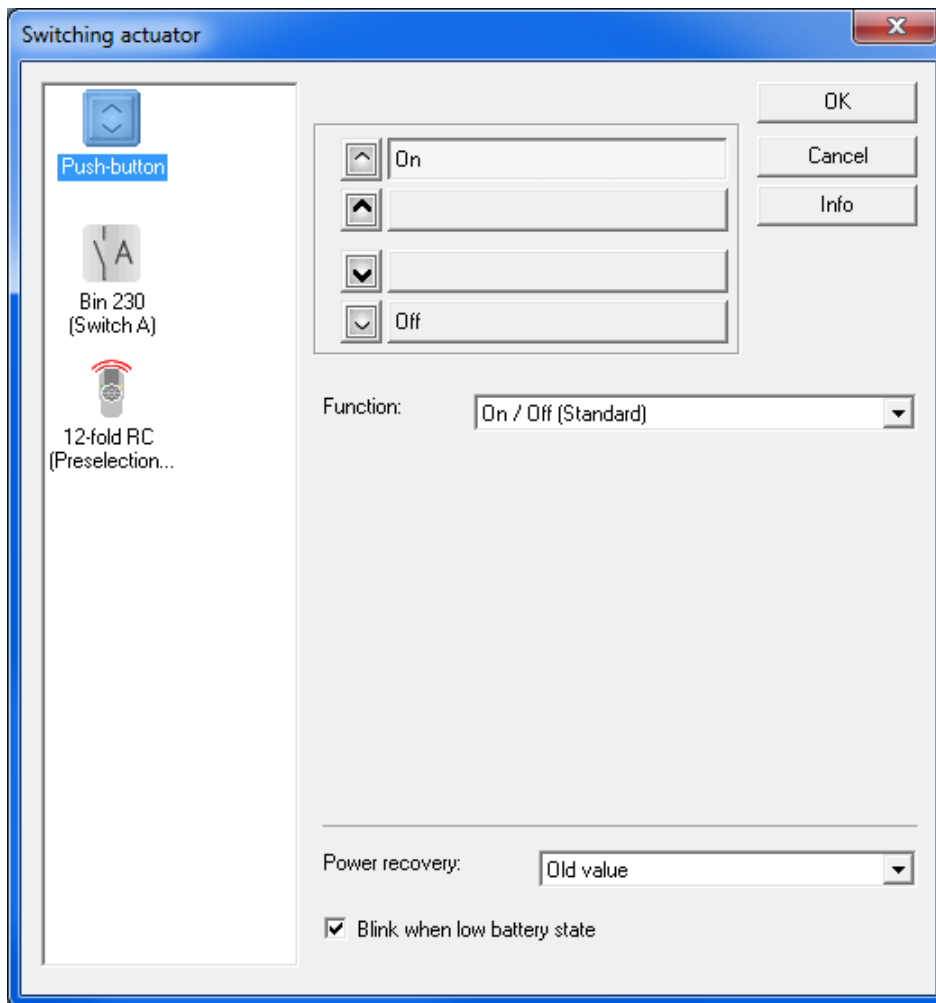
General information:

The switching actuator can be used for switching a wide range of electrical loads (see Instructions for Installation). It can be controlled by any sensor of the xComfort product family.

As soon as a [Connection](#) is established between a sensor and an actuator, the actuator can be configured.

Right-click the switching actuator and select the item *Settings* in the [Drop Down Menu](#).

Then the configuration window should appear, which usually looks like that:



The different setting options are structured as follows:

1. The left box displays the sensors assigned to the switching actuator (in our case: a single push-button, Bin 230 and hand-held transmitter). By left-clicking one of these sensors you can select the function you want to carry out.
2. The next box (top center) depends on the sensor and displays the commands a sensor can send to an actuator. They are depicted as icons, with the command buttons you can select from situated next to them. As you will see later, different functions can now be assigned to these boxes. In our case (single push-button) the icons stand for the following commands: short push at the top of the push-button, long push at the top of the push-button, long push at the bottom of the push-button, and short push at the bottom of the push-button. Moving the mouse pointer to the different command icons will display a tool tip which briefly explains how to trigger this command.
3. The box top right includes the following command buttons:
 - OK: Confirms the settings entered and returns to the MRF main window.
 - OK + Load: Confirms, returns to the MRF main window and immediately loads the modifications into the device.
 - Cancel: Discards the modifications carried out and returns to the MRF main window.
 - Info: Opens the Help dialog for Switching Actuators
4. The functions bar enables you to select the different functions which the switching actuator carries out when it receives a specific command. There is a standard function for each sensor which the switching actuator defines after establishing the connection to a sensor (same as in Basic Mode). Some functions occupy more than just one command button, as we will see in the following function descriptions:
Among them, depending on the pre-set functions, various slider controls (control time, runtime, interval time), which allow you to set time-related functions.

5. In this box (bottom right) you can pre-set the behaviour of the transmitter in case of power recovery and low battery.

In case the sensor battery is low, you can select whether or not the switching actuator should send a warning after switching it on (output blinks once).

Regarding power recovery, you can pre-set how the switching actuator should react to it. There are three options to choose from:

- Old value (Standard): Actuator maintains the same state as before the power failure
 - On: After power recovery the actuator switches the output ON
 - Off: After power recovery the actuator switches the output OFF

All functions of the Switching Actuator:

On / Off (Standard), occupies 2 command buttons

Switches ON resp. OFF

On / Switch-on Delay, occupies 1 command button

On Command which is executed immediately or after an adjustable Delay time

Off / On with Switch-off Delay, occupies 1 command button

Off Command which is executed immediately or after an adjustable Delay time

Off with Advance Warning, occupies 1 command button

Staircase function which switches ON immediately and switches OFF after an adjustable time.

The Switching Actuators Output is blinking 15 seconds before it switches OFF.

Push-button/Key Mode, occupies 2 command buttons

The Switching Actuator is only ON while its sensor is activated; Otherwise it is OFF

Surge, occupies 1 command button

The Switching Actuator toggles with every sensor activation its output Value.

Blinking, occupies 1 command button

The Switching Actuator begins to blink when its sensor is activated. You can adjust the interval time.





No Function, occupies 1 command button





Has no Function

Functions for Push-button, Hand-held Transmitter, Home Manager and Binary Input Bat/230 Mode 4:

On / Off (Standard)  ON /  OFF,  and  free, only for  selectable

On / Switch-on Delay free selectable for  ,  ,  and 

Off / Switch-off Delay free selectable for  ,  ,  and 


Off with Advance Warning free selectable for  ,  ,  and 



Push-button/Key Mode for  ,  or  ,  ; only for  oder  selectable



Surge only for  and  selectable



Blinking free selectable for  ,  ,  and 

Functions for Binary Input Bat/230 Mode 1 and Mode 3 (Pushbutton):



Surge (Standard) only for  selectable

On / Switch-on Delay free selectable for  and 

Off / Switch-off Delay free selectable for  and 



Off with Advance Warning free selectable for  and 











Push-button/Key Mode for  and  , only for  selectable

Blinking free selectable for  and 
















Functions for Binary Input Bat/230 Mode 2 and Mode 3 (Switch):

On / Off (Standard)  ON /  OFF, only for  selectable

On / Switch-on Delay free selectable for  and 

Off / Switch-off Delay free selectable for  and 
Off with Advance Warning free selectable for  and 
Push-button/Key Mode free selectable for  and 
Surge free selectable for  and 
Blinking free selectable for  and 

Functions for Room Controller and Temperature Input:

On / Off (Standard)  ON /  OFF, only for  selectable
On / Switch-on Delay free selectable for  and 
Off / Switch-off Delay free selectable for  and 
Off with Advance Warning free selectable for  and 
Push-button/Key Mode free selectable for  and 
Surge free selectable for  and 
Blinking free selectable for  and 

[Configuration Example for Switching Actuator](#)

Dimming Actuator



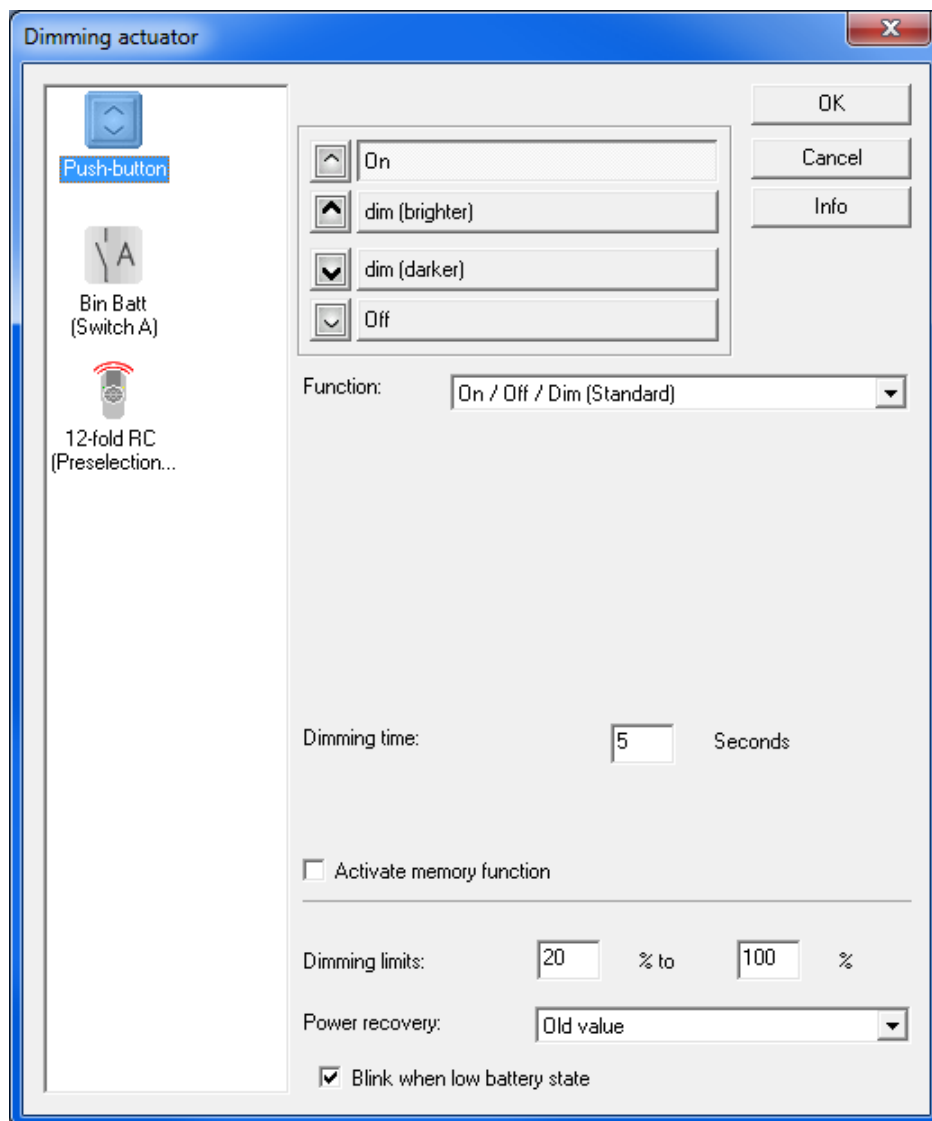
General information:

The dimming actuator can be used for dimming and switching all kinds of electrical loads (see Instructions for Installation). It can be controlled by any sensor of the xComfort product family.

As soon as a [Connection](#) has been established between a sensor and an actuator, the actuator can be configured.

Right-click the dimming actuator and select the item *Settings* in the [Drop Down](#) Menü.

Then the configuration window should appear, which usually looks like that:



The different setting options are structured as follows:

1. The left box displays the sensors assigned to the dimming actuator (in our case: a single push-button, Bin 230 and hand-held transmitter). By left-clicking one of these sensors you can select the function you want to carry out.
2. The next box (top center) depends on the sensor and displays the commands a sensor can send to an actuator. They are depicted as icons, with the command buttons you can select from situated next to them. As you will see later, different functions can now be assigned to these boxes. In our case (single push-button) the icons stand for the following commands: short push at the top of the push-button, long push at the top of the push-button, long push at the bottom of the push-button, and short push at the bottom of the push-button. Moving the mouse pointer to the different command icons will display a tool tip which briefly explains how to trigger this command.
3. The box top right includes the following command buttons:
 - OK: Confirms the settings entered and returns to the MRF main window.
 - OK + Load: Confirms, returns to the MRF main window and immediately loads the modifications into the device.
 - Cancel: Discards the modifications entered and returns to the MRF main window.
 - Info: Opens the Help dialog for Dimming Actuators
4. The functions bar enables you to select the different functions which the dimming actuator carries out when it receives a specific command. There is a standard function for each sensor which the dimming actuator defines after establishing the connection to a sensor (same as in

Basic Mode). Some functions occupy more than just one command button, as we will see in the following function descriptions:

Among them, depending on the functions that are set, several slider controls (control time, runtime, interval time), which allow you set time-related functions.

Another item is setting the dimming time, which defines how long it takes a dimmer to dim from 0% to 100%. It can be selected individually for each command, but the maximum dimming time is 250 seconds.

5. In this box (bottom right) you can set the dimming limits as well as the behaviour of the transmitter in case of power recovery or low battery.

The dimming limits define the range within which the actuator will dim (standard min. 20% to max. 100%).

In case the sensor battery is low, you can select whether or not the dimming actuator should send a warning after switching it on (output blinks once).

Regarding power recovery, you can pre-set how the dimming actuator should react to it. There are three options to choose from:

Old value (Standard): Actuator maintains the same state as before the power failure

On: After power recovery the actuator switches the output ON

Off: After power recovery the actuator switches the output OFF

6. By setting this option, the dimming actuator remembers the last value used before switching off and switches on again to precisely this value when it receives the next ON command.

All functions of the dimming actuator:

On / Off Dimming (Standard), occupies 4 command buttons

Switches ON resp. OFF

On / Switch-on Delay, occupies 1 command button

ON command that comes either immediately or after an adjustable delay time

Off / On with Switch-off Delay, occupies 1 command button

OFF command that comes either immediately or after an adjustable delay time

On and Off with Advance Warning, occupies 1 command button

Stair case function which switches on immediately and turns off after an adjustable time.

Before

the dimming actuator switches off, the output will blink once 15 seconds earlier as an advance warning.

Key-Dim-Mode, occupies 2 command buttons

The dimmer switches ON after a short push at the push-button or key, and OFF after a long push at the push-button or key, and it dims up or down after a long push at the push-button or key.

Surge, occupies 1 command button

The dimming actuator changes its initial state by dimming each time it is activated.

Blinking, occupies 1 command button, takes the dimming time into account

After activating it, the dimming actuator starts blinking after an adjustable interval time

Desired Brightness, occupies 1 command button

The dimming actuator dims to a pre-set brightness value, at the pre-set dimming speed (dimming time)

Dim brighter occupies one command box (long press of the button)

Dims brighter as long as the button is held depending on the dimming limits and the dimming time

Dim darker occupies one command box (long press of the button)

Dims darker as long as the button is held depending on the dimming limits and the dimming time

No Function, occupies 1 command button

No function – as its name implies

Functions for buttons, hand-held transmitter, Home Manager, Room Manager and Bin Bat/230 Mode4:

On / Off / Dimming (Standard) ON / OFF / Dim (Brighter) / Dim (Darker), only selectable for

On / Switch-on Delay free selectable for , , and

Off/on with switch-off delay can be selected at random from , , and

On with pre-warning before off can be selected at random from , , and

Dim brighter can be selected at random from and

Dim darker can be selected at random from and

Key-Dim-Mode for ON/OFF, Dim (brighter/darker) or ON/OFF, Dim (brighter/darker); only selectable for or

Surge only selectable for and

Blinking free selectable for , , and

Desired Brightness, free selectable for , , and

Functions for Bin Bat/230 Mode1 and Bin Bat/230 Mode3 (Push-button):

Key-Dim-Mode for ON/OFF and Dim (brighter/darker), only selectable for

On / Switch-on Delay free selectable for and

Off/on with switch-off delay can be selected at random from and

On with pre-warning before off can be selected at random from and

Surge (Standard) only selectable for

Blinking free selectable for and

Desired Brightness, free selectable for and

Dim brighter can be selected at random from and

Dim darker can be selected at random from and

Functions for Bin Bat/230 Mode2, Bin Bat/230 Mode3 (switches) and movement sensors:

On / Off (Standard) ON / OFF, only selectable for

On / Switch-on Delay free selectable for and

Off/on with switch-off delay can be selected at random from and

On with pre-warning before off can be selected at random from and

Blinking free selectable for and

Desired Brightness, free selectable for and

Functions for room controller, temperature input and analog input:

On / Off (Standard) ON / OFF, only selectable for

On / Switch-on Delay free selectable for and

Off/on with switch-off delay can be selected at random from and

On with pre-warning before off can be selected at random from and

Blinking free selectable for and

Desired Brightness, free selectable for and

[Configuration Example Dimming Actuator](#)

Shutter Actuator



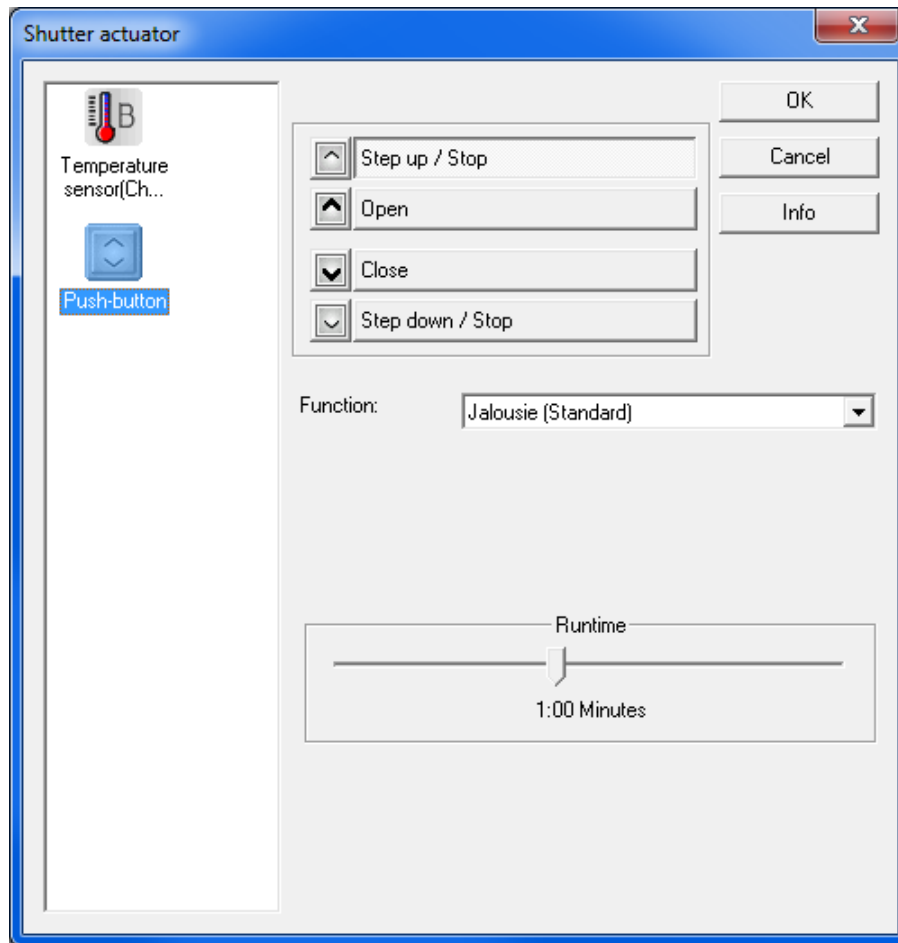
General information:

The shutter actuator can be used for controlling blinds, shutters, awnings, etc. (see Instructions for Installation). It can be controlled by any sensor of the xComfortproduct family, and of course by the Home Manager RF.

As soon as a [Connection](#) is established between a sensor and an actuator, the actuator can be configured.

Right-click the shutter actuator and select the item *Settings* in the [Drop Down Menu](#).

This should also display the configuration window, which usually looks like that:



The different Setting options are structured as follows:

1. The left box displays the sensors assigned to the shutter actuator (in our case: a double push-button, Bin 230 and remote control). By left-clicking one of these sensors you can select the function you want to carry out.
2. The next box (top center) depends on the sensor and displays the commands a sensor can send to an actuator. They are depicted as icons, with the command buttons you can select from situated next to them. As you will see later, different functions can now be assigned to these boxes. In our case (single push-button) the icons stand for the following commands: short push at the top of the push-button, long push at the top of the push-button, long push at the bottom of the push-button, and short push at the bottom of the push-button. Moving the mouse pointer to the different command icons will display a tool tip which briefly explains how to trigger this command.
3. The box top right includes the following command buttons:
 - OK: Confirms the settings entered and returns to the MRF main window.
 - OK + Load: Confirms, returns to the MRF main window and immediately loads the

modifications into the device.

Cancel: Discards the modifications carried out and returns to the MRF main window.

Info: Opens the Help dialog for Switching Actuators

4. The functions bar enables you to select the different functions which the shutter actuator carries out when it receives a specific command. For each sensor there is a standard function which the actuator defines after establishing the connection to a sensor (same as in Basic Mode). Some functions occupy more than just one command button, as we will see in the following function descriptions:

Among them, depending on the pre-set functions, various slider controls (control time, runtime) which allow you to set time-related functions.

Shutter actuator with safety functions:

The shutter actuator CJAU-01/02 contains functions to lock the actuator for movement commands. You can assign 2 safety objects and/or 1 acknowledge object for every shutter actuator.

Safety object:

Every sensor (for example a binary input with a wind or solar sensor) that has been assigned to the actuator and configured with the function "Safety function when ON" or "Safety function when OFF".

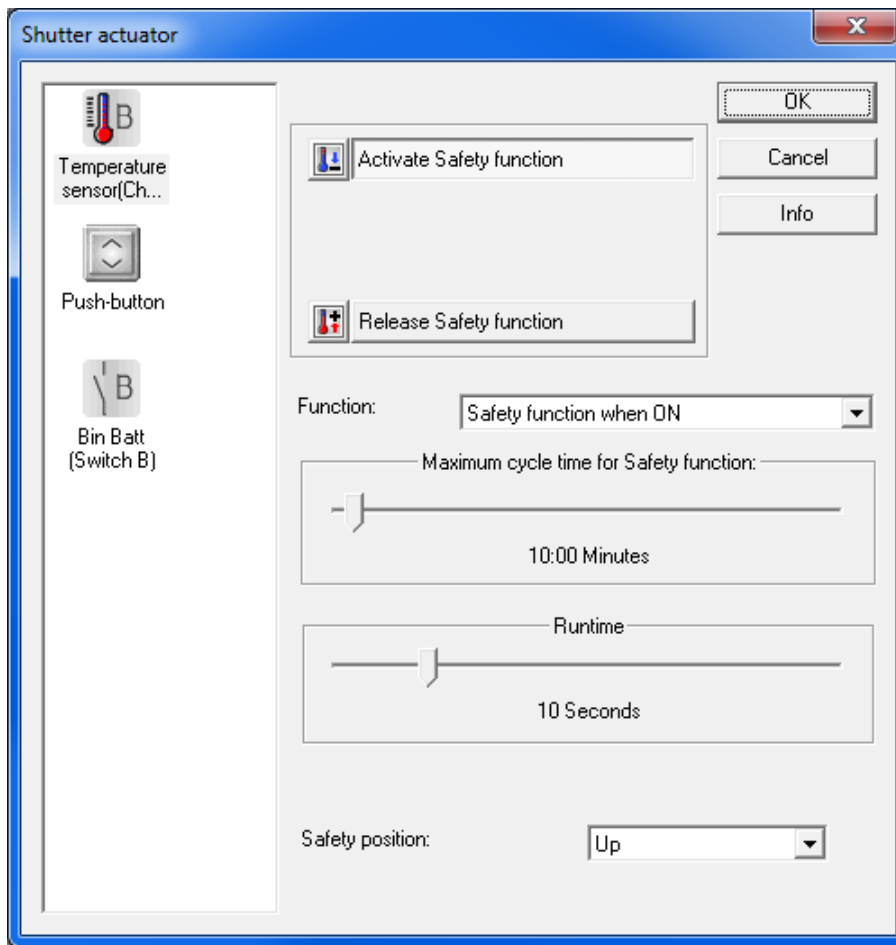
Now if the sensor is activated the actuator moves in the safety position (configurable to UP, DOWN, STOP) and can not be operated by any other sensor. As mentioned above 2 safety objects can be assigned to each shutter actuator. The safety position has to be the same for both safety objects. Only when both safety objects are deactivated (if both were activated before) or the acknowledge sensor is activated the safety function is deactivated.

The interrogation of the release command can be set cyclically. That means a binary input has to send every 10 minutes a "Safety function deactivated" command to the shutter actuator (if the actuator is set to 12 minutes). If that is not the case the shutter actuator activates the safety function automatically after 12 minutes.

Acknowledge sensor:

This sensor can deactivate a safety function independent from the status of the safety objects. For example if you want to manually operate an actuator.

Configuration window for safety function:



All functions of a shutter actuator:

- Shutter (Standard)**, occupies 4 command buttons
Slat up/down resp. Stop and Open/Close for the length of the configured Runtime
- Roller Blind**, occupies 4 command buttons
Stop and Open/Close for the length of the configured Runtime
- Roller Blind + Open**, occupies 4 command buttons
Stop and Open/Close (with Open briefly) for the length of the configured Runtime
- Open**, occupies 1 command button
Open for the length of the configured Runtime
- Close**, occupies 1 command button
Close for the length of the configured Runtime
- Stop**, occupies 1 command button
Stop Command
- Sequencer**, occupies 1 command button
Toggles with every Command in the following sequence Open – Stop – Close – Stop – Open ...
- No Function**, occupies 1 command button
Has no function

Available for CJAU-01/02:

- Safety function when ON**, needs 2 command buttons
When safety is activated the actuator moves in safety position and is locked for further operation until safety is deactivated from the same sensor or the acknowledge sensor.
- Safety function when OFF**, needs 2 command buttons
Like Safety function when ON only vice versa
- Acknowledge safety function**, needs 1 command button

The actuator is enabled for operation immediately independent form the status of its safety objects

Functions for Push-button, Hand-held transmitter, Home Manager and Binary Input 230/Bat Mode 4:

Shutter (Standard) Step up/Stop / Step down/stop , Open and Close, only for selectable

Roller Blind Stop / Stop , Open and Close, only for selectable

Roller Blind + Open Stop / Stop , Open und Close + Open briefly, only for selectable

Open free selectable for , , and

Close free selectable for , , and

Stop free selectable for , , and

Sequencer free selectable for , , and

Functions for Binary Input 230/Bat Mode1 and Mode3 (Pushbutton):

Sequencer (Standard) only for selectable

Open free selectable for and

Close free selectable for and

Stop only for selectable

Functions for Binary Input Bat/230 Mode2 and Mode3 (Switch):

Open free selectable for and , Standard for

Close free selectable for and , Standard for

Stop free selectable for and

Functions for Room Controller and Temperature Input:

Open free selectable for and , Standard for

Close free selectable for and , Standard for

Stop free selectable for and

[Configuration Example for Shutter Actuator](#)

Push-button



This device is a sensor which can control all xComfort actuators (switching actuator, dimming actuator, shutter actuator, analog actuator), and it can send commands to the Home Manager, Room-Manager and communication interface.

There are three different types of pushbuttons: 1-fold (1 rocker), 2-fold (2 rocker) and 4-fold (4 rocker)

A 4-fold pushbutton has double functionality than a 2-fold pushbutton and a 2-fold double the functionality of a 1-fold pushbutton besides that they are equal.

When sending commands a 4-fold pushbutton uses 4 different channels (rocker 1 to 4) and a 2-fold pushbutton uses 2 different channels (left or right).

Every rocker or channel can send the following commands:



: short push at the top of the push-button



: long push at the top of the push-button



: long push at the bottom of the push-button



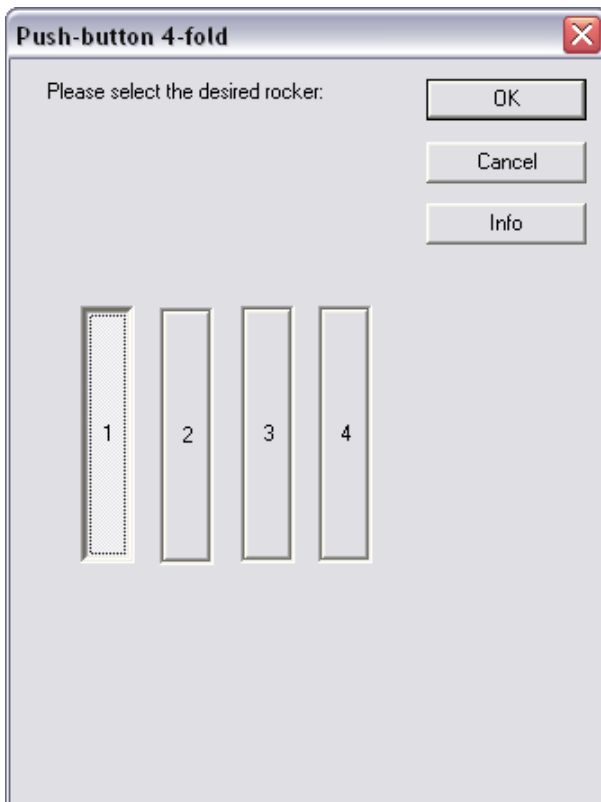
: short push at the bottom of the push-button

Connecting a pushbutton to a device:

By drawing a line from a pushbutton to the desired device the pushbutton is assigned to this device.

For a 2-fold pushbutton you have to draw a connection from either the left or right side of the device icon to assign a connection from the left or right rocker.

If you draw a connection from a 4-fold pushbutton to a device a window pops up which lets you select the desired rocker (1 to 4) you want to connect.

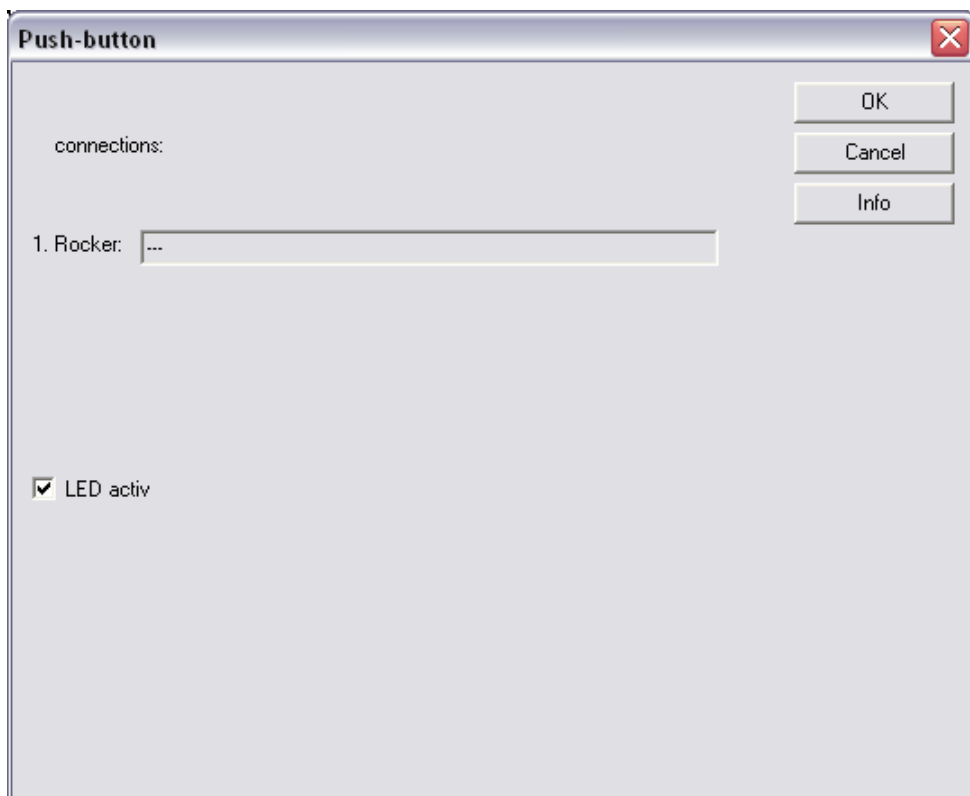


By using the popup-menu option 'Settings' you can see all devices to which a pushbutton has a connection to.

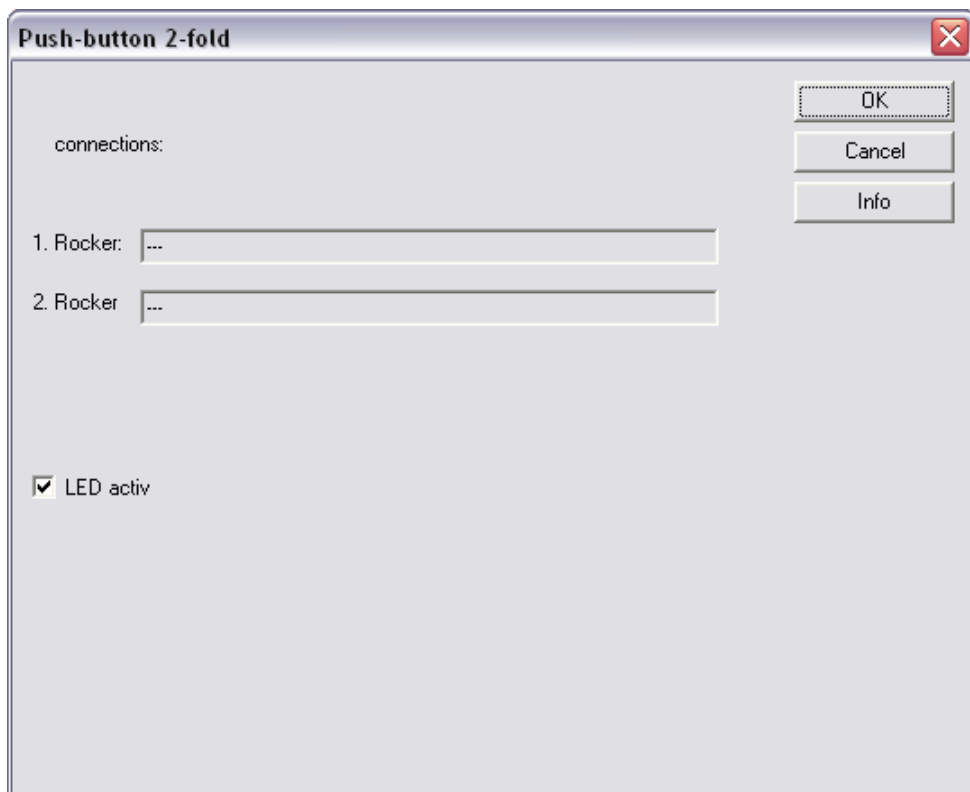
The pushbuttons of the new generation (from september 2009) also have LED's for displaying its state.

You can activate or deactivate the LED function in the setting window of the pushbutton.

Configuration window 1-fold pushbutton:



Configuration window 2-fold pushbutton:



Configuration window 4-fold pushbutton:

Binary Input



With binary inputs we basically distinguish between battery-supplied and mains-supplied devices. Both types of devices can control any actuator (switching actuator, dimming actuator, shutter actuator), but they can also send information to the Home Manager (open contact, closed contact, e.g. in case of a call-in for a window status).

Mains-supplied binary input:

As its name implies, this type of binary input is 230VAC driven. It provides two potential-carrying inputs (channel A, channel B) where the voltage applied can be measured (see Instructions for Installation) and from where different commands can be sent, depending on the value and configuration (mode) of the binary input.

Battery-supplied binary input:



This type of binary input is battery-driven (3V via CR2477N). Potential-free contacts can be connected to the inputs (channel A, channel B). The binary input evaluates the status (closed, open) and the device in a different way, depending on the configuration (mode), and reacts by sending different commands.

The following description of the modes is applicable both to mains-supplied and battery-supplied binary inputs.

Mode 1:





In this mode both inputs (A and B) are treated as push-buttons and we distinguish between a short

push at the push-button  and a long push at the push-button .

Mode 2:





In this mode both inputs (A and B) are treated as switches and we distinguish between ON (contact closed)  and OFF (contact open) .

Mode 3:



In this mode channel A is treated as a push-button and channel B as a switch.



With channel A we distinguish between a short push at the push-button  and a long push at the push-button .



With channel B we distinguish between ON (contact closed)  and OFF (contact open) .

Mode 4:



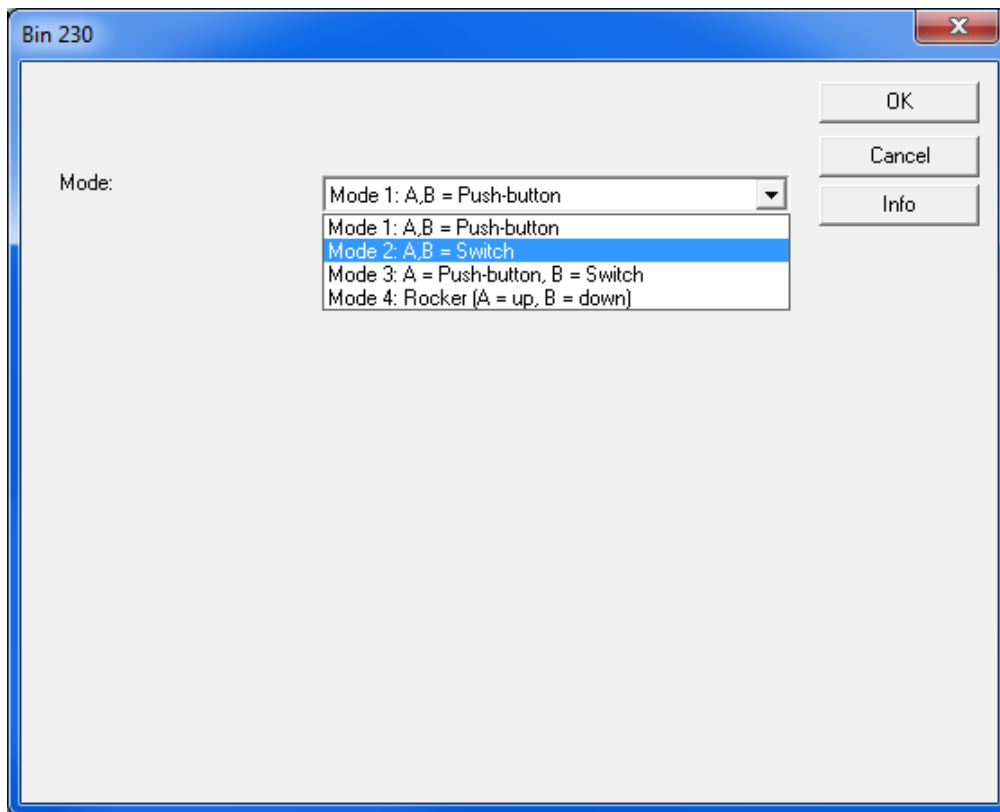
In this mode both inputs (A and B) are combined, so they offer the same functions as a push-button.

Channel A sends a short push at the top of the push-button  and a long push at the top of the push-button .

Channel B sends a short push at the bottom of the push-button  and a long push at the bottom of the push-button .

How to select the modes:

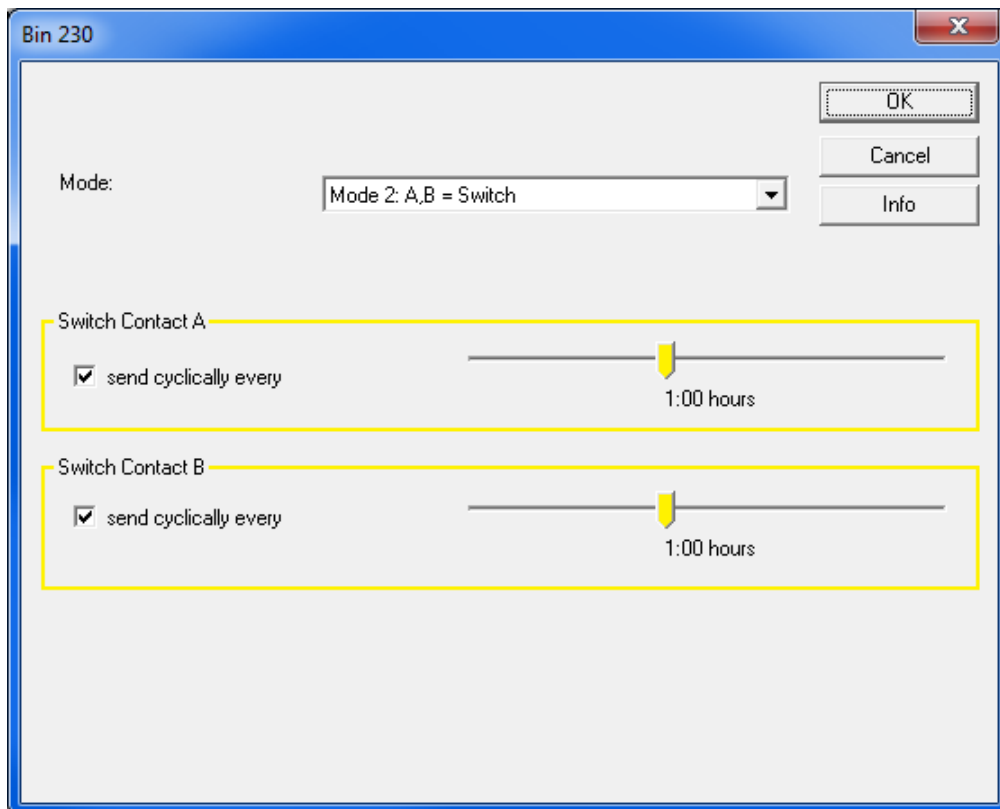
By right-clicking the binary input, you can select from among the 4 modes under *Settings* in the *Drop Down Menu*



1. In the *Mode* selection box you can set the individual modes (1 to 4)
2. The box top right contains the following command buttons:
 - OK: Confirms the selected settings and returns to the MRF main window.
 - OK + Load: Confirms, returns to the MRF main window and immediately loads the modifications into the device.
 - Cancel: Discards the modifications entered and returns to the MRF main window.
 - Info: Opens the Help dialog for Dimming Actuators

Additional settings for mode 2:

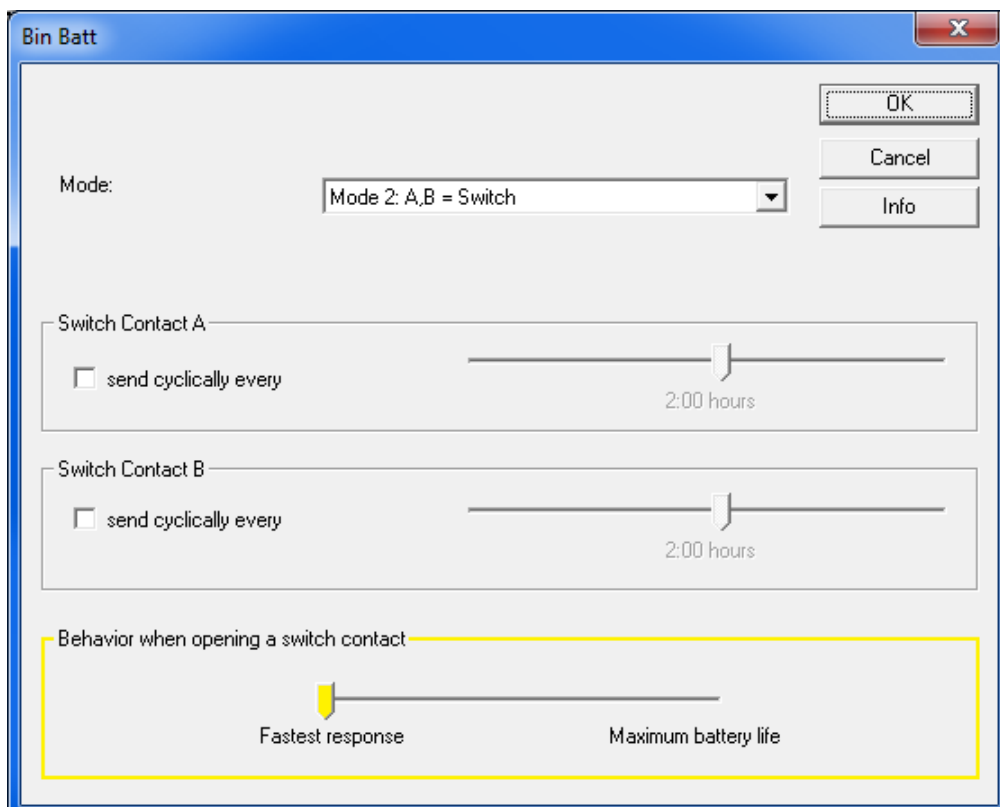
For Mode 2 and Mode 3 (channel B) you can carry out additional settings for the switching contact.



For the relevant switching contacts (A and B) you can select whether or not the status is to be sent cyclically.

If you select "send cyclically" the cycle time (default 1 hour, minimum 10 minutes to maximum 18 hours) can be set by means of a slider control.

Only applicable for battery-supplied binary inputs:



For a battery-supplied binary input you can also select how it should behave when the switching contact opens.

Note: A fast reaction impacts the battery life negatively.

Room Controller



The room controller serves as a sensor and can control all xComfort actuators (switching actuator, dimming actuator, shutter actuator, etc.); it can also send information (temperature) to the Home Manager, Room Manager, etc.

In order to scan the room controller, turn the adjustment wheel to the upper/lower stop or actuate the activating keys (types CRCA-00/02 and CRCA-00/03 only)

It has an internal temperature sensor (0 to max. 40°C) and a transmitter for the desired temperature, which allows to change the desired temperature by $\pm 3^\circ\text{C}$ with an adjustment wheel.

You can choose between the two modes (Send switching commands, Send measured value) via the settings window.

Sending a switching command:

The screenshot shows the 'RC Humidity' settings window. It is divided into two main sections: 'Temperature' and 'Humidity'. Each section has two radio buttons: 'Send switching commands' (selected) and 'Send temperature value' (or 'Send humidity value' for humidity). In the 'Temperature' section, 'Switching point 1' is set to 21 °C, 'Switching point 2' is set to 18 °C, and 'Hysteresis (1+2)' is set to 1 °C. There is a 'Temperature offset' set to 0 °C and a 'send cyclically every' checkbox with a slider set to 2:00 hours. The 'Humidity' section has a 'Switching point' set to 50 %, 'Hysteresis' set to 5 %, a 'Humidity offset' set to 0 %, and a 'send cyclically every' checkbox with a slider set to 2:00 hours. On the right side of the window are buttons for 'OK', 'Cancel', and 'Info'.

In this mode a switching command is sent. The following criteria determine when it is to be sent.


The value of the transmitter for the desired temperature (adjustment wheel max. $\pm 3^{\circ}\text{C}$) is added to the switching point (standard 21°C). The result is a desired value.

At the same time the *Real temperature* is measured internally.

If the temperature measured internally is lower than the desired temperature, the command

“below”  is sent.

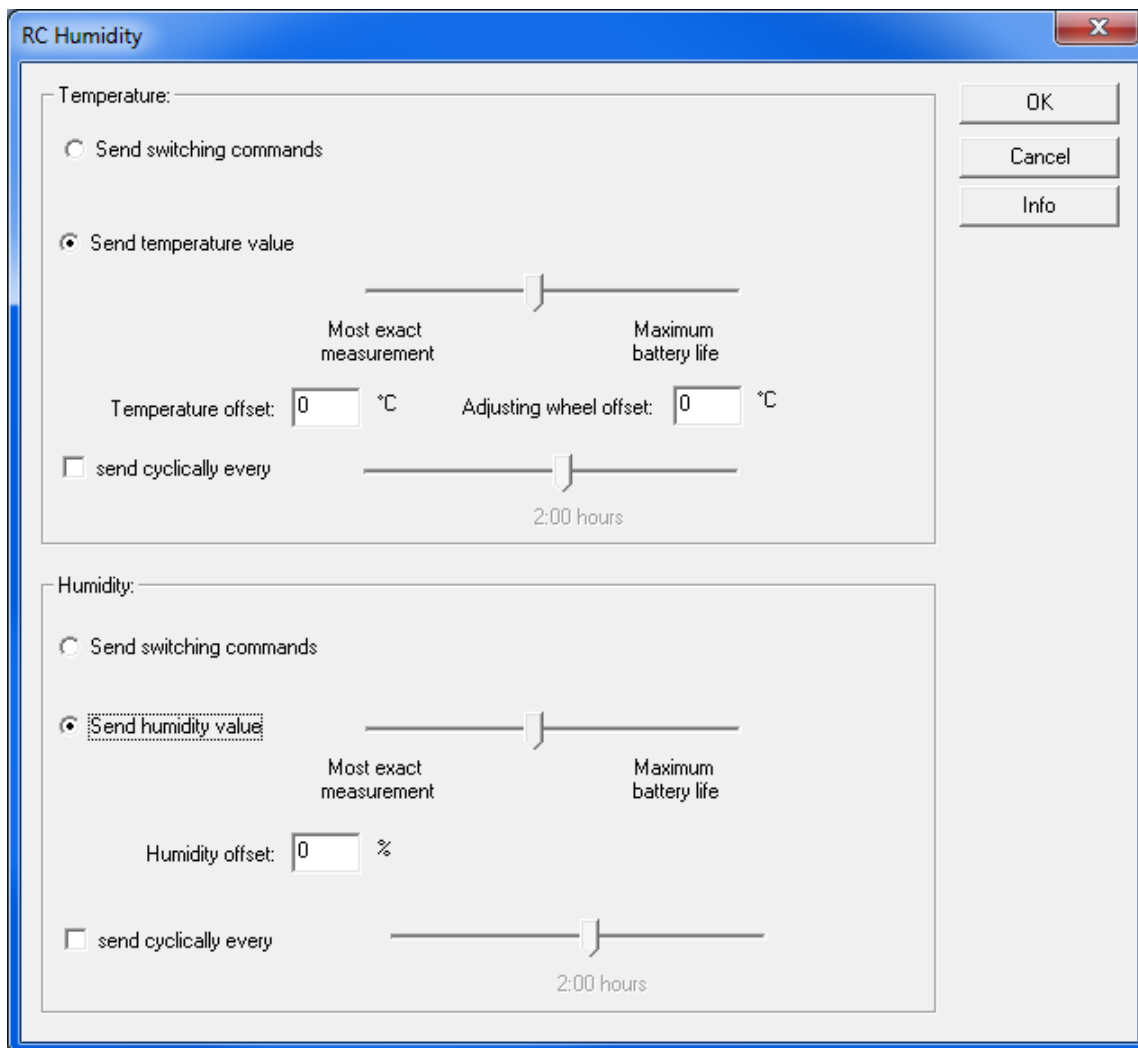
If the temperature measured internally exceeds the desired temperature, the command “beyond”

 is sent. But it is also possible to set a hysteresis (standard 0.5°C). This will be explained in detail in an example that follows later.

A second switching point can be entered for the new room controller with operating mode switching (CRCA-00/02) when sending a switching command. You can then switch between the two set values by means of a switch underneath the battery cover.

This is to provide the option of having a lower set temperature during the night or when you are on holiday, etc. The set hysteresis value applies to both switching points.

Sending a temperature value:



By selecting *Send temperature value*, the temperature measured internally is sent to the allocated device.

You can select how often (and how precise) the temperature should be measured and sent, and

whether it is to be sent according to a cycle time (to be adjusted with a slider control).

Room controller with humidity (CRCA-00/03):

In addition to the functions described above, the room controller with humidity has a second channel for measuring the relative air humidity (0-100%).

As in the case of temperature measurements, there are two modes, Send switching command and Send humidity value, and the option to set an offset value or switching hysteresis value.

The same setting options as for temperature measurements apply to humidity measurements, but the position of the adjustment wheel has no effect on the humidity channel.

As shown on the device icon, when connecting the temperature channel to another device, the line is drawn from the left side of the icon, whereas it is drawn from the right for humidity values.

See also [Configuration Example for Room Controller](#)

Temperature Input



The temperature input serves as a sensor and can control all xComfort actuators (switching actuator, dimming actuator, shutter actuator) and it can send a measured value (temperature) to the Home Manager.

In order to scan it, just take off the cover and when prompted (*You can now activate battery-supplied devices ...*) press the activating key.

It provides two inputs (channel A, channel B) for external temperature sensors, which cover a measuring range from -50°C to +180°C.

In case the temperature set is either not reached or exceeded, it can either send a switching command to the Home Manager, or the temperature measured – just like the room controller.

Both input channels (A und B) are independent from each other and can be treated separately.

Sending a switching command:

Temperature input

Channel A

☒ Send switching commands Switching point: 21 °C
☐ Send temperature value Hysteresis: 1 °C

☐ send cyclically every 2:00 hours

Offset: 0 °C

Channel B

☒ Send switching commands Switching point: 21 °C
☐ Send temperature value Hysteresis: 1 °C

☐ send cyclically every 2:00 hours

Offset: 0 °C

OK
Cancel
Info

In this mode a switching command is sent. It depends on the following criteria at what time it is sent.

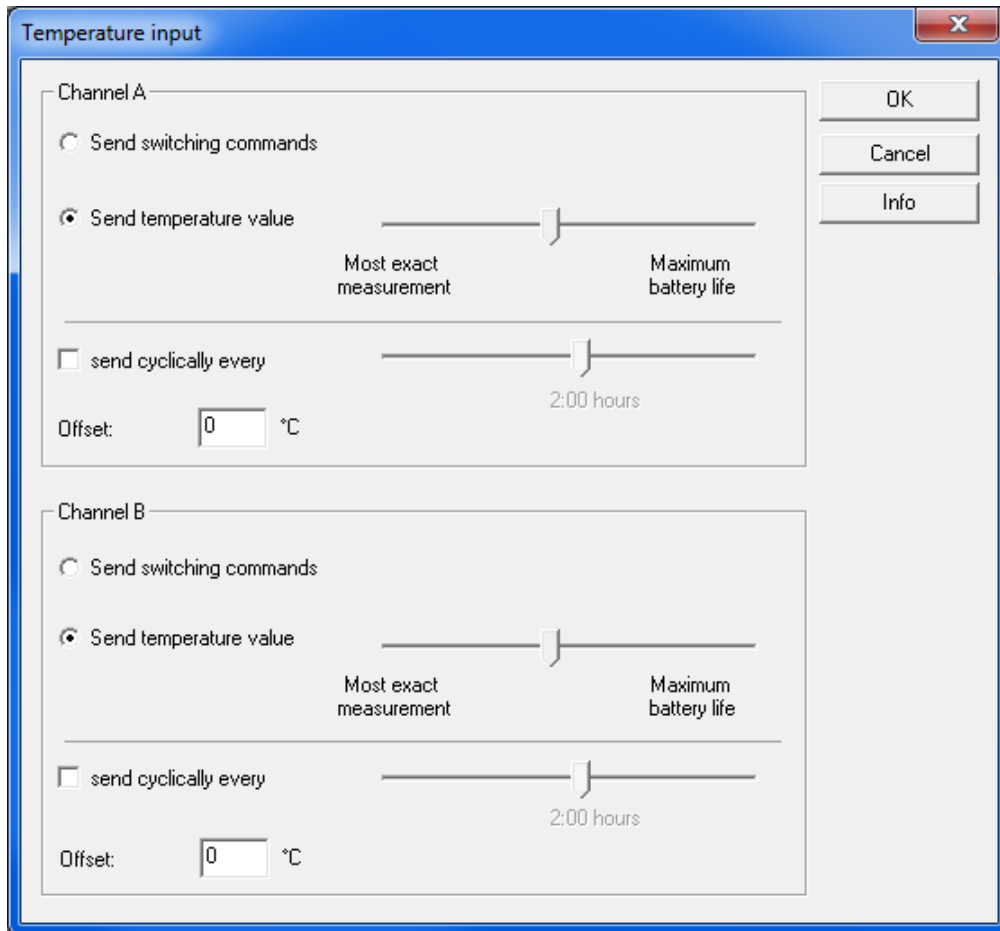
If the temperature measured is lower than the pre-set switching point, the command "below" is sent.



If the temperature measured exceeds the pre-set switching point, the command "beyond" is sent. But it is also possible to set a hysteresis (standard 0.5°C), which means that the command *beyond* will not be sent until the measured value minus hysteresis is higher than the switching point.



Sending a temperature value:



Selecting *Send temperature value* sends the temperature measured to the Home Manager. You can select how many times (and how precise) the temperature should be measured and sent, and whether it is to be sent according to a cycle time (adjustable by means of a slider control).

Gateway

The Gateway (RS232 interface or USB-RF-Configuration-Stick) is used to communicate between the MRF program and all other xComfort devices.

RS232 Interface:

It features an RS232 jack connector and can be connected to the PC or laptop with any conventional serial cable.

As the device is battery-supplied, it will work for an extended period of time (6 hours with permanent operation) without any external power supply.

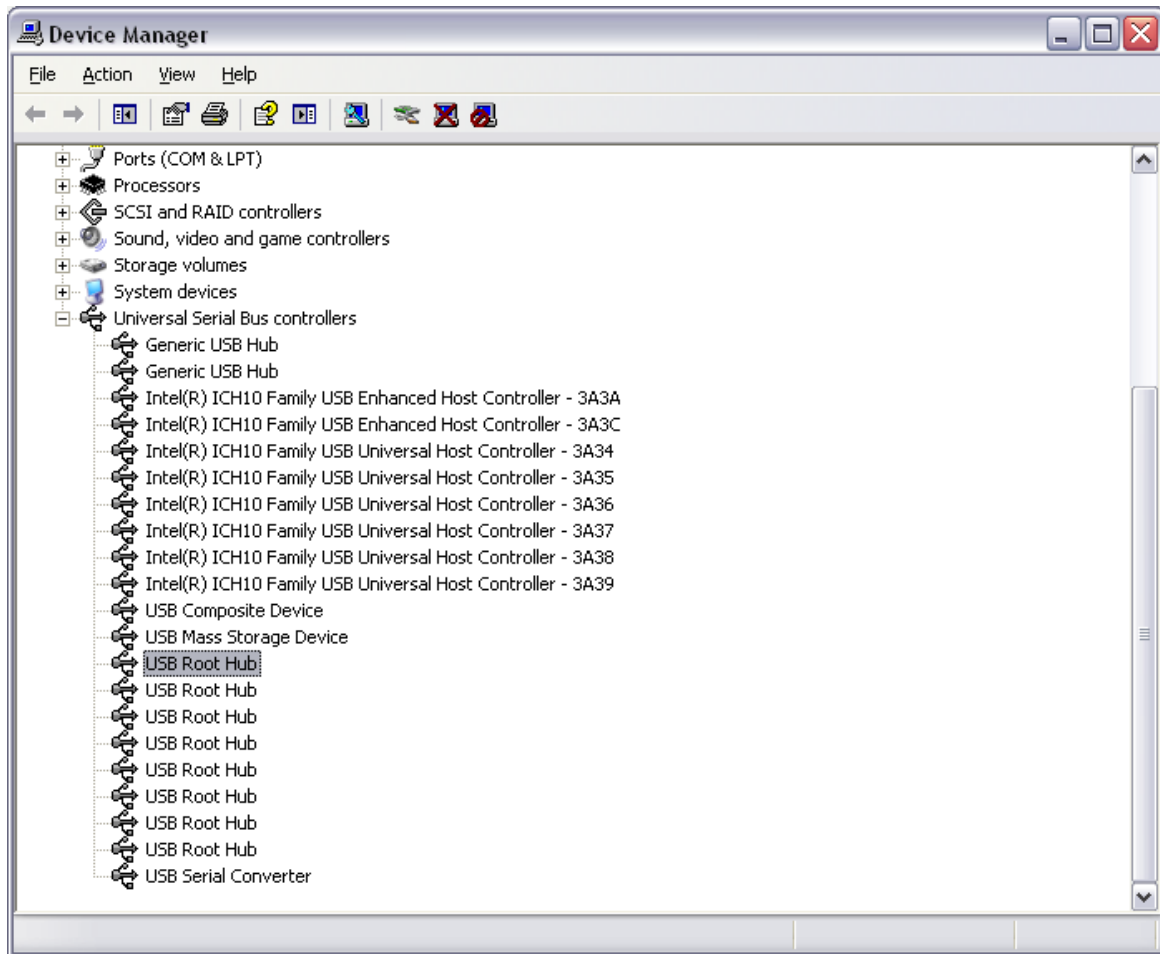
USB-RF-Configuration-Stick:

It can be connected to a PC or Laptop that has a standard USB connector (USB1.1, 2.0 or 3.0).

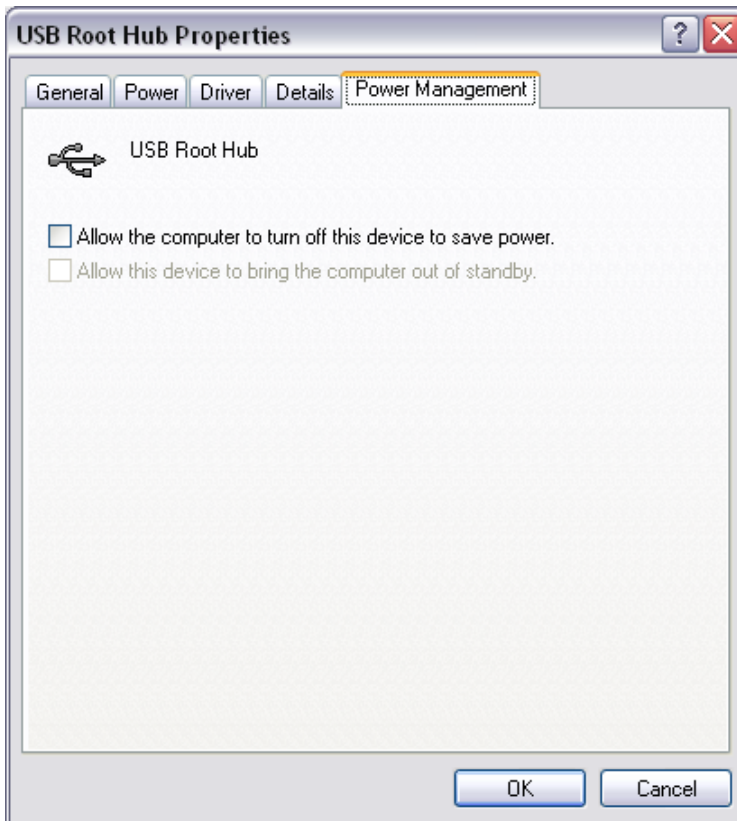
For normal operation there is no driver installation necessary. Only if the device software needs to be updated a special driver is necessary. This driver comes with the actual MRF version and will be prepared automatically. (See [Software Update for USB-RF-Sticks](#) for further details).

We recommend changing the Power-Settings of the USB-Hubs for your PC or Laptop to prevent unwanted connection issues when working with the USB-RF-Configuration-Stick..

Start -> Control Panel -> Double click on "System" -> Select the „Hardware“ tab -> Click the button „Device Manager“.



Open the Folder „Universal Serial Bus Controllers -> Double click every single „USB Root Hub“ and „Generic USB Hub“ and **deactivate** the option „Allow the computer to turn off this device to save power“ in the „Power management“ tab.



With that option you assure that the USB-port cannot unintentionally be switched off by the system.

Further technical information can be found in the mounting instruction.

Home Manager RF



The Home Manager RF serves as a central operating, control and display unit. It can send commands to all actuators and receive commands from all sensors, which it then processes internally.

For further technical information on the Home Manager RF, please turn to the Instructions for Installation.

The connection to other xComfort devices is established by means of datapoints.

As soon as a connection has been drawn from a device to the Home Manager RF, the Home Manager datapoint window will open.

There you can select the datapoint for the assigned device (always suggests the next free datapoint). In case of several assignments to the same datapoint, the relevant datapoint is simply depicted with its multiple assignments.

The name of the datapoint can be looked up in the Eaton Manager RF Software.

With OK you confirm what you entered.

Under *Create datapoint file* in the *Drop Down Menu*, you can save the datapoint file resulting from the configurations in a text file (*.txt), which can then be used in the Home Manager RF configuration program (Eaton Manager RF).

For further information on the configuration of the Home Manager, please turn to the Help section of the Eaton Manager RF program.

Analog actuator



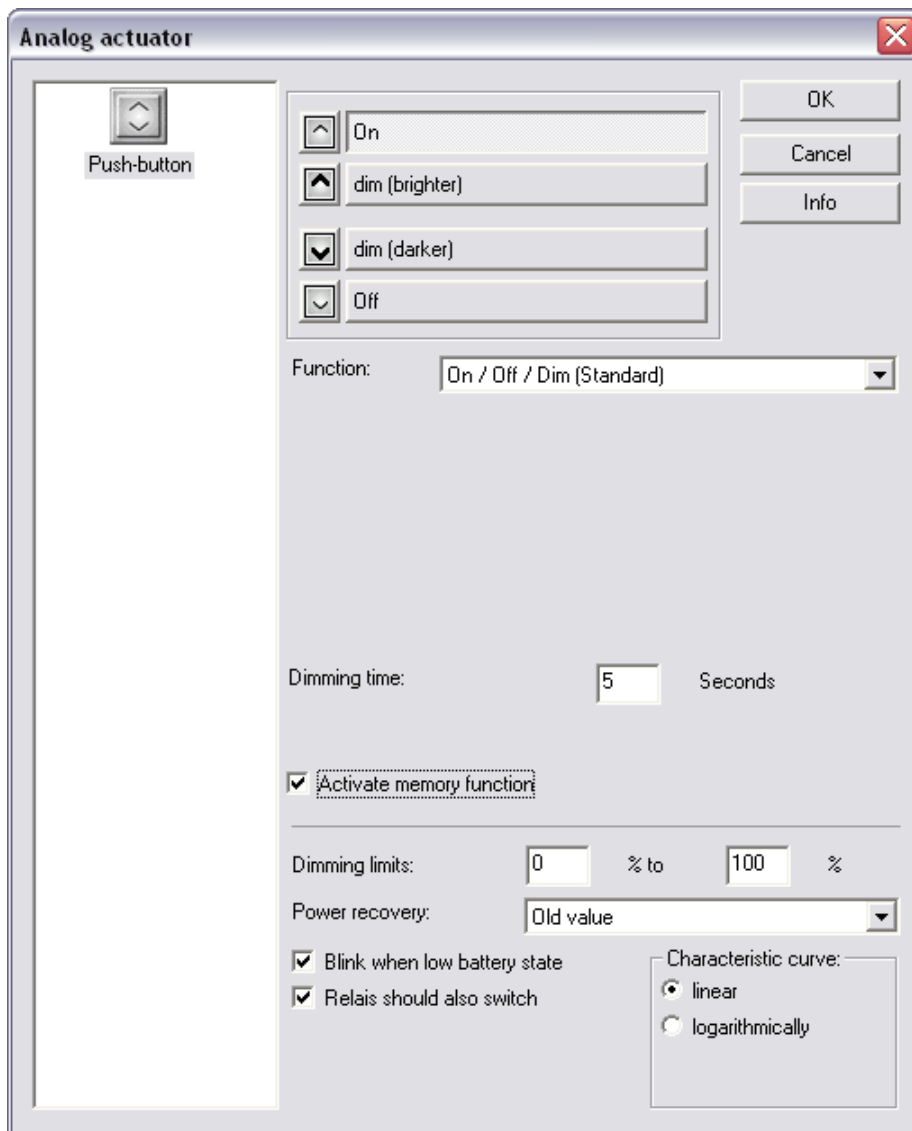
General information:

The analog actuator (0-10V or 1-10V) can be used to control and switch different devices. It provides a 0-10V or 1-10V (max. 20mA) control signal and its functions are similar to the dimming actuator. With the additional relay loads can also be switched. By using the MRF configuration window you can enable or disable the relay. It can be controlled by any sensor of the xComfort product family.

As soon as a [Connection](#) has been established between a sensor and an actuator, the actuator can be configured.

Right-click the analog actuator and select the item *Settings* in the [Drop Down Menu](#).

Then the configuration window should appear, which usually looks like that:



The different setting options are structured as follows:

1. The left box displays the sensors assigned to the dimming actuator (in our case: a single push-button). By left-clicking on this sensor you can select the function you want to carry out.
2. The next box (top center) depends on the sensor and displays the commands a sensor can send to an actuator. They are depicted as icons, with the command buttons you can select from situated next to them. As you will see later, different functions can now be assigned to these boxes. In our case (single push-button) the icons stand for the following commands: short push at the top of the push-button, long push at the top of the push-button, long push at the bottom of the push-button, and short push at the bottom of the push-button. Moving the mouse pointer to the different command icons will display a tool tip which briefly explains how to trigger this command.
3. The box top right includes the following command buttons:
 - OK: Confirms the settings entered and returns to the URF main window.
 - Cancel: Discards the modifications entered and returns to the URF main window.
 - Info: Opens the Help dialog for Dimming Actuators
4. The functions bar enables you to select the different functions which the analog actuator carries out when it receives a specific command. There is a standard function for each sensor which the analog actuator defines after establishing the connection to a sensor (same as in Basic Mode). Some functions occupy more than just one command button, as we will see in the following function descriptions:

Among them, depending on the functions that are set, several slider controls (control time, runtime, interval time), which allow you set time-related functions.
Another item is setting the dimming time, which defines how long it takes a analog actuator to dim from 0% to 100%. It can be selected individually for each command, but the maximum dimming time is 250 seconds.

5. In this box (bottom right) you can set the dimming limits as well as the behaviour of the transmitter in case of power recovery or low battery, if the relay should also switch and the desired dimming characteristic curve..

The dimming limits define the range within which the actuator will dim (standard min. 20% to max. 100%).

In case the sensor battery is low, you can select whether or not the analog actuator should send a warning after switching it on (output blinks once).

Regarding power recovery, you can pre-set how the dimming actuator should react to it. There are three options to choose from:

Old value (Standard): Actuator maintains the same state as before the power failure

On: After power recovery the actuator switches the output ON

Off: After power recovery the actuator switches the output OFF

The characteristic curve for dimming can be set linear or logarithmic.

6. Activate memory function: By setting this option, the analogue actuator remembers the last value used before switching off and switches on again to precisely this value when it receives the next ON command.

7. Dim to a percentage value: If this function is activated the analogue actuator will react on a direct percentage value command (0-100%) by dimming to that value instead of immediately jumping to that value. The set dimming time will be taken into consideration. The option will only be available if the connected sensor is a Room-Manager, Home-Manager or communication interface.

All functions of the analog actuator:

On / Off Dimming (Standard), occupies 4 command buttons

Switches ON presp. OFF

On / Switch-on Delay, occupies 1 command button

ON command that comes either immediately or after an adjustable delay time

Off / Switch-off Delay, occupies 1 command button

OFF command that comes either immediately or after an adjustable delay time

Off with preliminary Warning, occupies 1 command button

Stair case function which switches on immediately and turns off after an adjustable time.

Before

the analog actuator switches off, the output will blink once 15 seconds earlier as an advance warning.

Dimming function, occupies 2 command buttons

The analog actuator switches ON after a short push at the push-button or key, and OFF after a long push at the push-button or key, and it dims up or down after a long push at the push-button or key.

Momentary contact mode, occupies 1 command button

The analog actuator changes its initial state by dimming each time it is activated.

Flashing mode, occupies 1 command button, takes the dimming time into account

After activating it, the dimming actuator starts blinking after an adjustable interval time

Desired Brightness, occupies 1 command button

The analog actuator dims to a pre-set brightness value, at the pre-set dimming speed (dimming time)





No Function, occupies 1 command button


No function – as its name implies





Functions for Push-button, Hand-held Transmitter and Binary Input Bat/230 Mode 4:







On / Off / Dimming (Standard)  ON /  OFF /  Dim (Brighter) /  Dim (Darker), only



selectable for 

On / Switch-on Delay free selectable for , ,  and 

Off / Switch-off Delay free selectable for , ,  and 

Off with preliminary Warning free selectable for , ,  and 

Dimming function for  ON/OFF,  Dim (brighter/darker) or  ON/OFF,  Dim (brighter/darker); only selectable for  or 



Momentary contact mode only selectable for  and 



Flashing mode free selectable for , ,  and 



Desired Brightness, free selectable for , ,  and 

Functions for Bin Bat/230 Mode1 and Bin Bat/230 Mode3 (Push-button):



Dimming function for  ON/OFF and  Dim (brighter/darker), only selectable for 



On / Switch-on Delay free selectable for  and 

Off / Switch-off Delay free selectable for  and 

Off with preliminary Warning free selectable for  and 



Momentary contact mode (Standard) only selectable for 



Flashing mode free selectable for  and 



Desired Brightness, free selectable for  and 



Functions for Bin Bat/230 Mode2 and Bin Bat/230 Mode3 (Switch):



On / Off (Standard)  ON /  OFF, only selectable for 

On / Switch-on Delay free selectable for  and 

Off / Switch-off Delay free selectable for  and 



Off with preliminary Warning free selectable for  and 



Flashing mode free selectable for  and 



Desired Brightness, free selectable for  and 



Functions for Room controller and Temperature input:



On / Off (Standard)  ON /  OFF, only selectable for 

On / Switch-on Delay free selectable for  and 

Off / Switch-off Delay free selectable for  and 

Off with preliminary Warning free selectable for  and 

Flashing mode free selectable for  and 

Desired Brightness, free selectable for  and 

The configuration of the analog actuator is very similar to the dimming actuator. You can set additionally if the internal relay should also switch or not and set a characteristic curve. The characteristic curve can be used to compensate the dimming behaviour of lamps.

Overview Room-Manager



1. General:

The Room Manager is a central control, display and operator device for one or more rooms. There are 2 different sensor areas:

1. Left and right each with 2 sensor keys (top and bottom) fully functional as a 2-fold

pushbutton. The assignment to other devices is equal to a pushbutton.

2. A ring shaped sensor area from which you can navigate through the displayed menus and operate the device.

All parameters, data and settings are shown by the 128x64 pixel display.

2. Operation:

The sensor areas are operated by a push or a circular motion with the fingers. Metal or plastic parts can not be used to operate the sensor areas.

2.1 Sensor buttons:

Every pair of key (left and right side) builds a „rocker“. Equal to the pushbutton top is ON and bottom is

OFF. The centre of the sensor area is designated by a red LED.

During a short press at the sensor key a short sound is played (only if the key sound is enabled) and the

LED is blinking 1 time.

If you hold the key press at the sensor 2 short sounds are played and the LED is blinking 2 times. This

indicates a long key press. As soon as you move away your finger from the sensor key now another short sound is played but only if you had a long key press before. Again the LED is blinking 1 time.

The RF-commands the Room Manager sends during a short or long key press are completely identical to a 2-fold pushbutton. The only difference is to get a feeling for the key operation because a touch sensor feels different to a mechanical key.

2.2 Sensor wheel:

You have 3 different ways for operation:

1. Short key press: Operation somewhere in the ring shaped sensor area without circular motion, Moving away the finger in under 1 second a short key press is detected, a short click sound is played
2. Long key press: Operation somewhere in the ring shaped sensor area without circular motion, Moving away the finger in over 1 second a long key press is detected, a short click sound is played, A long key press is only used when manually operating outputs, shading,...
3. Circular motion: Operating somewhere in the ring shaped sensor area and immediately moving the finger, as long as the finger moves in the sensor ring the circular motion is detected. Switching the direction and slower/faster moving is possible. After detecting a circular motion over a short angle the Room Manager plays a short click sound. This sound repeats every time a new movement over a specific angle is detected. Playing the click sounds gives you a confirmation for the circular movement.

IMPORTANT: The area in the centre of the ring shaped sensor is **not** designed to detect operation!!

The sounds for both the sensor wheel and the sensor keys can be enabled or disabled by using the menu

in the Room Manager. Also the brightness of the Key-LEDs and the background lighting of the display can be dimmed from 0 to 100% („Miscellaneous -> Lighting“).

3. Display:











The display of the Room Manager has a size of 128x64 pixels and white background lighting that can be dimmed. Either for active operation or standby mode.

The bottom line of the display shows time, day and date and is shown on every main page. The same applies to the top line of the display that shows the name and the number of the page. An arrow besides the page number shows in which direction you can scroll through the pages.

In the MRF it is possible to define if a main page (Exception: General) will be visualised on the Room-Manager or not.

3.1 Symbols and their meaning:

On some pages different symbols and icons are used to display actual modes and states:

-  Heating, besides normally its state ON/OFF is displayed
-  Cooling, besides normally its state ON/OFF is displayed
-  Ventilation, besides normally its state ON/OFF is displayed
-  Rising, used at the trend of the outdoor temperature
-  Falling, used at the trend of the outdoor temperature
-  is displayed if you are in the installer menu
-  Info, is mostly used in association with an info text
-  Overtemperature state, Display in the output page for the status of a new [Switching actuator 10A/16A](#)
-  Locked State, Display in the output page for the status of a new [Switching actuator 10A/16A](#)
-  Blinking State, Display in the output page for the status of a new [Switching actuator 10A/16A](#)

3.2 Menu structure:

The display of the Room Manager is divided in several pages. In its basic state only 3 pages (Room 1, Time and Date and Miscellaneous) are active. According to the configuration more pages are generated.

- Room 1: The room temperature (measured by the internal or an external temperature sensor) is displayed. Further assignments for room controlling are possible.
- Room 2: The room temperature (measured by a external temperature sensor assigned to the Room manager) is displayed. Further assignments for room controlling are possible.
- Room 3: Same as Room 2
- Ventilation: A simple ventilation control using a timer programme. The measured room temperature is also displayed on this page.
- Outdoor temperature: The outdoor temperature measured by a assigned temperature input is displayed. The temperature trend and the maximum and minimum value are also shown. Depended on the configuration it is possible to display two additional analogue values as the outdoor brightness or the wind speed. Settings for the outdoor temperature main page can be done in
- “Miscellaneous”.
- Inputs The state of the assigned inputs/sensors are displayed.
- Outputs: The state of the assigned actuators/actuator groups are displayed and can also be operated.

Shading:	The state of the assigned shutters/shutter groups are displayed and can also be operated.
Timer programme:	The state of the timer programmes are displayed and can also be configured.
Time and date:	The time and date are displayed and can also be changed.
Miscellaneous:	A menu containing several configuration options is displayed.

By using the ring shaped sensor wheel you can navigate through the pages. With a short key press on the ring shaped sensor area you can enter the menu of each page. You now can navigate up and down through the page menu. A short key press to the menu point „Back“ you jump one level higher again.

Further information about configuration possibilities and operation of the several pages/functions you can find by following the links below:

[Heating and cooling and the Room Manager](#)

[Ventilation and the Room Manager](#)

[Shading and the Room Manager](#)

[Inputs and the Room Manager](#)

[Outputs and the Room Manager](#)

[Operation modes and the Room Manager](#)

[Timer and the Room Manager](#)

[Several settings in the Room Manager](#)

[Software download by using the IrDA interface](#)

[Timer programme and the Room Manager](#)

Extended functions (Enable by checking the Box in the miscellaneous menu):

[Presence simulation on the Room-Manager](#)

[Logic functions on the Room-Manager](#)

[Scenes on the Room-Manager](#)

New as of Version 6.34:

[Room Manager with Safety Function](#)

[Room Manager with Energy Function](#)

New from Version 6.35 + new Hardware:

[Room-Manager with Bluetooth](#)

New for Version 41a:

Support of the new [Switching actuator 10A/16A](#) and the extended Status message

Heating and cooling with the Room Manager (Room 1 to 3)

You can define up to 6 rooms/temperature zones for heating and/or cooling in the Room Manager.

For a fully functional room control you need at least one device for temperature measurement and one heating/cooling actuator.

Room 1 is always active because the room temperature is measured by the internal temperature sensor of the Room Manager. When another room controller or temperature input is assigned to the Room Manager you can select if this sensor is used for room temperature/humidity measurement (Room 1 to 6) or only used as an input.

Room-Manager_1

Energy-input 1 | Energy-input 2 | Energy general | Overview Energy | Bluetooth/SMS | Alerts | Text template | Calls | Miscellaneous

Room 1 | Room 2 | Room 3 | Room 4 | Room 5 | Room 6 | Shading | Inputs | Outputs | Presence simulation | Logic functions | Scenes

Name:

☒ Show this page on the Room-Manager

Heating request:

Cooling request:

Setpoints

Heating:		Cooling:	
Comfort:	<input type="text" value="22"/> °C	Comfort:	<input type="text" value="24"/> °C
Standby:	<input type="text" value="20"/> °C	Standby:	<input type="text" value="26"/> °C
Night:	<input type="text" value="18"/> °C	Night:	<input type="text" value="28"/> °C
Frost:	<input type="text" value="10"/> °C	Heat:	<input type="text" value="32"/> °C

Time lag of room

☐ Optimise Switch-ON time

Outdoor temperature:

Humidity sensor:

☒ Set temperatures and operation mode changeable by the sensor buttons

Once a temperature sensor and a heating/cooling actuator is assigned the room can be configured. You can change the set points for the temperature of every operation mode for heating and for cooling as well (if cooling actuator is assigned).

At „optimize Switch-ON time“ you set the time lag of the room. You have 3 different selection possibilities (fast, middle, slow).

To prevent an oscillation of the heating/cooling every set point has a fix hysteresis of 0.3°C. If you have a set point of 22°C the heating is activated until it reaches 22°C. At 22°C it switches Off. If the temperature falls down below 21.7°C the heating is switched On again.

You can also set a timer programme for the operation mode comfort or standby for every room.

More info about timer programmes you can find [here](#).

If you are using both heating and cooling for a room there is a dead zone of 0.5°C between the set points for heating and cooling of every operation mode. This means that the set point for heating must at least be 0.5°C lower than the set point for cooling at any time.

For room 1 you can also set an offset for the measured temperature. In room 2 und 3 the offset for the temperature is directly set in the assigned sensor.

It is possible to define a separate sum output for heating and cooling which switches on a central heating/cooling device if one or more rooms (with actuators or RF Radiator thermostats) request it.

In each room a maximum of 3 window contacts (binary inputs) can be defined. If one or more windows are opened the room will be switched to operation mode heat-/frost-protection until all windows are closed.

If desired it is possible to define that the set-temperature or the operation mode of a room can be changed via the local pushbuttons if the room main page is displayed. The normal function (switching light etc.) is deactivate if a room main page is displayed and active if another main page is displayed.

Connection to a RF Radiator thermostat:

If there is one or more RF Radiator thermostat connected to a Room the general Room regulation is working different. It is no longer possible to connect normal actuators as heating and cooling request to that room. The regulation of the valve position takes place in the Radiator thermostat and not in the Room-Manager. The Room-Manager only sends Set- and Actual-temperature to the Radiator thermostat and receives a state change from it.

The displayed state of the Room depends on the state of all connected Radiator thermostats. Only when all thermostats are closed (0%) the Room will show "Heating OFF". The same goes for the Sum request of all rooms.

Using the Room menu and selecting "Valve states" the exact state of every connected Radiator thermostat will be displayed.

If the Room-Manager is set to operation type „cooling only“ the set value for the heating request will be 0°C.

If there is more than one Radiator thermostat connected to a Room and the Room temperature should be measured by one of them it can be selected in the box next to "Room temperature" in the Room configuration window in the MRF.

Connection to a Multi-Heating actuator:

A Multi-Heating actuator can be connected with its 12 heating inputs either to Heating-request, Cooling-request or combined as Heating-/Cooling-request. Per room as much channels of the same type as desired can be connected.

To make sure that the Room-Manager and the Multi-Heating actuator always are in the same operation type the Room-Manager channel „Operation type output“ needs to be connected to the channel „Heating/Cooling“ of the Multi-Heating actuator. (for details see Operation-Mode and – Type toggle of the Room-Manager).

Rooms of the Room-Manager that are exclusively connected to Multi-Heating actuator inputs do not affect the status of the Sum requests (Heating and cooling). The Multi-Heating actuator has its own sum output which should be used to control a pump etc. Another reason is that the regulation of the electrical valves takes place in the Multi-Heating actuator and the Room-Manager only provides the Set- and Actual-temperature for each input with 2 separate RF-commands.

Multi-Heating actuator as heating request:

In this configuration the connected channel of the Multi-Heating actuator is only allowed to work in operation type „heating only“. If the Room-Manager is set to operation type „cooling only“ the set value for the heating request will be 0°C.

Further possible heating request connections for a room: other channels of Multi-Heating actuator or Dimplex-Heating-actuators

Possible cooling request connections for a room: only actuators (Switching-, Dimming-, Analog, Shutter-actuator, Channels of intelligent devices)

Multi-Heating actuator as cooling request:

In this configuration the connected channel of the Multi-Heating actuator is only allowed to work in operation type "cooling only". If the Room-Manager is set to operation type "heating only" the set value for the heating request will be 60°C.

Possible heating request connections for a room: only actuators (Switching-, Dimming-, Analog, Shutter-actuator, Channels of intelligent devices)

Further possible cooling request connections for a room: only other channels of Multi-Heating

actuator

Multi-Heating actuator as Heating-/Cooling-request:

In this configuration the connected channel of the Multi-Heating actuator is allowed to work in both operation types. Only one operation type must be active at a time (Only Heating or Only Cooling).

Further possible request connections for Room: other channels of Multi-Heating actuator

Also see [Overview of the Room Manager](#)

Outputs and the Room Manager

In the Room Manager you can define up to 10 different outputs (independent if single or multiswitching of actuators).

By using the sensor wheel you can operate the outputs (On, Off, Dim,...).

Devices that can be assigned to a output are switching actuator, dimming actuator, analogue actuator, shutter actuator, Comm.-interface and Home Manager.

Shutter actuators can only be used with shading and not with normal outputs.

Devices that have a direct RF-connection to the Room Manager are sending its state to the Room Manager whenever it changes. The actual state is also displayed in the output page of the Room Manager.

The name of the output can be changed in the Room Manager directly or in the MRF programme. Additional the basic state after a reset of the Room Manager can be set for every output in the MRF software.

Room-Manager_1

Energy-input 1 | Energy-input 2 | Energy general | Overview Energy | Bluetooth/SMS | Alerts | Text template | Calls | Miscellaneous
Room 1 | Room 2 | Room 3 | Room 4 | Room 5 | Room 6 | Shading | Inputs | Outputs | Presence simulation | Logic functions | Scenes

☒ Show this page on the Room-Manager

The name and the initial state after power ON can be set for each output (max. 10).
Output/actuator shows the connected devices. For further information click 'Help'.

Name:	Initial state after Power-ON	SMS	Output/actuator:
Light 1	Off	<input type="checkbox"/>	Light Kitchen
Light 2	Off	<input type="checkbox"/>	Light Bathroom
Light Living	Off	<input type="checkbox"/>	Living Room
Light Bedroom	Off	<input type="checkbox"/>	Light Bedroom
Light Martin	Off	<input type="checkbox"/>	Light Martin
Light Peter	Off	<input type="checkbox"/>	Light Peter

OK Cancel Apply Help

Also see [Overview of the Room Manager](#)

Ventilation control with the Room Manager

One or more actuators can be assigned to a unique ventilation output that is controlled by a timer. On the ventilation page of the Room Manager the room temperature (Room 1), the status and the operation mode of the ventilation is displayed.

The screenshot shows a software window titled "Room-Manager" with a standard Windows-style title bar (minimize, maximize, close buttons). Inside the window, there are three tabs: "Room 1", "Ventilation", and "Miscellaneous". The "Ventilation" tab is currently selected. Below the tabs, there is a text area containing the following instructions: "You can set the name of the ventilation and define a timer program. Ventilation output/actuator shows the connected devices. For further information click 'Help'." Below this text, there are three labels with corresponding input fields: "Name:" with a text box containing "Switching act", "Time:" with a button labeled "Timer programme...", and "Ventilation output/actuator:" with a text box containing "Switching actuator". At the bottom of the window, there are four buttons: "OK", "Abbrechen", "Übernehmen", and "Hilfe".

Also see [Overview of the Room Manager](#)

Inputs and the Room Manager

Up to 10 different inputs can be defined (temperatures, binary values, analogue values) and displayed in the Room Manager.

If you have binary values you can define the displayed text for the ON and OFF state in the MRF software and for analogue values the displayed unit (% , °C,...).

Room-Manager_1

Energy-input 1 | Energy-input 2 | Energy general | Overview Energy | Bluetooth/SMS | Alerts | Text template | Calls | Miscellaneous
Room 1 | Room 2 | Room 3 | Room 4 | Room 5 | Room 6 | Shading | Inputs | Outputs | Presence simulation | Logic functions | Scenes

☒ Show this page on the Room-Manager

You can define the display text for name and status for the inputs. For further info click 'Help'

Name:	ON/Unit	OFF	SMS	Input/sensor:
Brightness	Lux		<input type="checkbox"/>	A: Brightness (Channel A)
Humidity	%RH		<input type="checkbox"/>	A: Temp, B: Humidity (Channel A)

OK Cancel Apply Help

Also see [Overview of the Room Manager](#)

Shading and the Room Manager

You can define up to 3 groups for shading (independent if single or multiswitching of shutter actuators).

Changing the name of the shadings can be done in the Room Manager directly or by the MRF software.

By using the sensor wheel you can operate the Shadings (open, close, step up, step down).

For every shading you can define a timer in which you can set at what time the shading should be opened or closed. Additionally the shading group can be controlled in dependence of an analogue value (brightness), room temperature (room 1 to 6) or a binary value. Also a Hysteresis and a minimum time can be defined for the “enabling”.

Please pay attention that the “enabling” function has only influence on the shading group if the status of the timer is open! The “enabling” function has no influence if the status of the timer is close.

Also see [Overview Room Manager](#)

Operation-Mode and -Type toggle of the Room-Manager

The Room-Manager has 2 separate inputs that can be used for Operation-mode and Operation-type toggle. Any binary sensor or binary outputs of other intelligent devices can be connected to that inputs.

For Room-Managers with a software version under V40 only the input for Operation-mode toggle is available.

Operation mode and operation type:

With this input the operation mode and the operation type can be switched (only if the separate input for operation type is not connected).

The operation mode (Automatic, Comfort, Standby, Night, Frost-/Heat protection, OFF) and the operation type (heating only, cooling only, Heating and Cooling) for ON and OFF commands from the connected sensor can be configured.

The toggle will affect all Rooms simultaneously.

Operation type only:

If this input is used the combined toggle of the operation type with the operation mode is deactivated.

For OFF and ON commands of the connected sensors the operation type can be set to "none", "heating only", "cooling only" and "Heating and Cooling".

ATTENTION! If a [Multi-Heating actuator](#) is used in any Room it is necessary to set „heating only“ for OFF commands and „cooling only“ for ON commands.

The state of the operation type can now also be sent out by an own output. This output is necessary if inputs of [Multi-Heating actuator](#) are used in the Room-Manager and in that case it needs to be connected to the “Heating/Cooling” input of the Multi-Heating actuator. It can also be connected to „Toggle operation type“ inputs of other Room-Managers for synchronization of the operation type.

The toggle will affect all Rooms simultaneously.

Room-Manager

Room 1 | Room 2 | Room 3 | Room 4 | Room 5 | Room 6 | Toggle operation mode | Miscellaneous

Operation mode and Operation type

Sensor/Input:
TA

Operation mode: Operation type:

If 'OFF' change to: Standby none

If 'ON' change to: Comfort none

Attention!! The operation mode toggle will be used for all rooms (that are not connected to Heating actuator 12x) simultaneously.

Operation type only

Sensor/Input:
Modeumschaltung (Channel A)

Operation type:

If 'OFF' change to: Heating only

If 'ON' change to: Cooling only

Attention!! The Operation type toggle will be used for all rooms (connected to Heating actuator 12x) simultaneously.

Actuator/Output:
MCHA (Heating/Cooling)

OK Cancel Apply Help

Timers and the Room Manager

Up to 3 different timers can be defined in the Room Manager that can be assigned to an actuator or actuator groups. In the defined time span the timer is ON and beyond the time it is OFF. For every day you can define 3 different time spans directly in the Room Manager or by using the MRF programme.

The actual state and the operation mode for each timer is displayed in the Room Manager. Additionally there is an option to set the timer to „always ON“, „always OFF“ or „Auto“.

Only when using the operation mode „Auto“ the timer will work according to the defined time spans.

Timer programmes

Define the timer programme for the selected time control.
For further information click 'Help'.

Copy data from other timer programmes....

OK
Abort
Info

Monday:	COPY	6	0	-	22	0	0	0	-	0	0	0	0	-	0	0
Tuesday:	COPY	6	0	-	22	0	0	0	-	0	0	0	0	-	0	0
Wednesday:	COPY	6	0	-	22	0	0	0	-	0	0	0	0	-	0	0
Thursday:	COPY	6	0	-	22	0	0	0	-	0	0	0	0	-	0	0
Friday:	COPY	6	0	-	22	0	0	0	-	0	0	0	0	-	0	0
Saturday:	COPY	6	0	-	22	0	0	0	-	0	0	0	0	-	0	0
Sunday:	COPY	6	0	-	22	0	0	0	-	0	0	0	0	-	0	0

Information about how to set the timer programme can be found [here](#)

Also see [Overview of the Room Manager](#)

Further settings for the Room Manager

You can do additional settings such as the automatic change between summer and winter time, the user code and the configuration of the outdoor temperature main page.

At the outdoor temperature main pages are the outdoor temperature and two further values as the MIN/MAX measured outdoor temperature, inputs (e.g. brightness, wind speed), the room temperature or humidity of the rooms displayed.

You can also define if the battery status main pages will be displayed on the Room-Manager or not.

As last point you can see the result of the version test which verifies if the software version in the Room-Manager is equal to the software version which was scanned with the MRF.

Room-Manager_1

Room 1 | Room 2 | Room 3 | Room 4 | Room 5 | Room 6 | Shading | Inputs | Outputs | Presence simulation | Logic functions | Scenes
 Energy-input 1 | Energy-input 2 | Energy general | Overview Energy | Bluetooth/SMS | Alerts | Text template | Calls | Miscellaneous

☐ Always ask for operator code Operator code: 0000

☒ Show battery-page on the Room-Manager

Toggle operation mode by: External sensor

☒ Enable extended functions (Logic function, scenes, Presence simulation)

Settings outdoor temperature page:

☒ Show outdoor temperature page on the Room-Manager

Additional value 1: Inputs Brightness

Additional value 2: Inputs Humidity

☐ Automatically reset of trend (outdoor temperature) Daily at: 00:00:00

Settings Time & Date:

☒ Show time & date page on the Room-Manager

☒ Automatical change of Summer/Winter time

Version details: HW: 14b.3 (0.0) SW: 38a.0 (0) Version check OK (no version change)

Safety active
 Bluetooth active
 Energy active

OK Cancel Apply Help

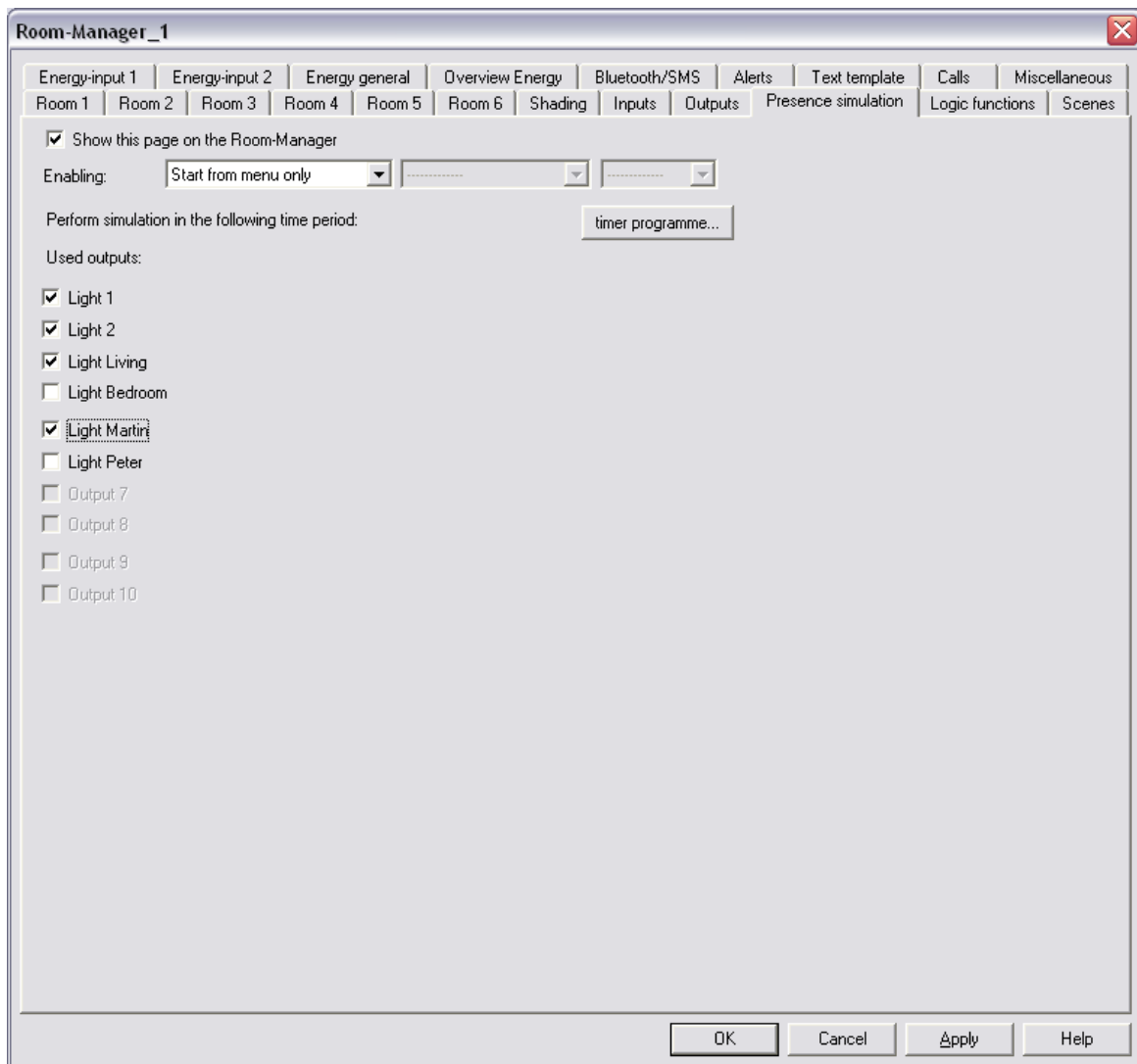
Also see [Overview of the Room Manager](#)

Presence simulation and the Room Manager

With the presence simulation on the Room-Manager you can control different outputs in a configurable time period. All outputs that are defined in the Room-Manager can be used for the presence simulation and will be switched ON and OFF selective for unsteady times (10 to 60 minutes).

The start of the presence simulation can be initiated by manual operation on the Room Manager, Markers, binary inputs and binary outputs. There is also a possibility to start the presence simulation when you set holiday on the Room-Manager.

Below is a picture of the configuration window:



Please note that you only use outputs for the presence simulation that are not already used as a starting variable in a scene or logic function. When activating the presence simulation it could look like unwanted switching of outputs to the user.

Like the other extended functions (scenes and logic) you have to check the box in the configuration window „Miscellaneous“ to use the presence simulation. Only after clicking „OK“ and re-opening the configuration window of the Room-Manager you can use the extended functions.

Logic functions at the Room-Manager

With the logic functions on the Room-Manager you can switch binary and analogue outputs, shadings or markers if the selected logic operation of the 2 starting variables (binary and analogue inputs, binary output, room temperature, room humidity, outdoor temperature, local pushbuttons, marker or timer) gets true.

A maximum of 5 different logic functions can be used. By checking the box at „Enable“ the logic operation will be activated and can be configured. You can set the starting variables, their logic connection (AND/OR/GREATER THAN/LESS THAN/EQUAL), a hysteresis, a minimum time and the executed action.

The configuration window looks like this:

The defined action is only executed if the logic operation between the 2 starting variables switches from false to true.

Like the other extended functions (scenes and presence simulation) you have to check the box in the configuration window „Miscellaneous“ to use logic functions. Only after clicking „OK“ and re-opening the configuration window of the Room-Manager you can use the extended functions.

Scenes on the Room-Manager

With a scene you can switch up to 6 different binary and analog outputs, shadings and markers. If the starting variable has the defined value the scene is executed.

A starting variable can be a binary input, binary output, timer, marker or you activate the scene directly from the Room-Manager menu.

A maximum of 5 scenes can be configured. A scene can be retriggered by sending the state of the starting variable again.

The configuration window looks like this:

By „add action“ and „remove action“ you can set which things the scene should do or remove them. Also analogue outputs can be set to a percentage value.

Like the other extended functions (presence simulation and logic) you have to check the box in the configuration window „Miscellaneous“ to use scenes. Only after clicking „OK“ and re-opening the configuration window of the Room-Manager you can use the extended functions.

General Information on the Room Manager with Safety Function:

Overview:

The Room Manager with Safety Function offers the following possibilities:

-) Warning function to protect against unauthorized entering (window contacts, motion sensors)
-) Warning function in case of smoke
-) Alarming and starting of actions

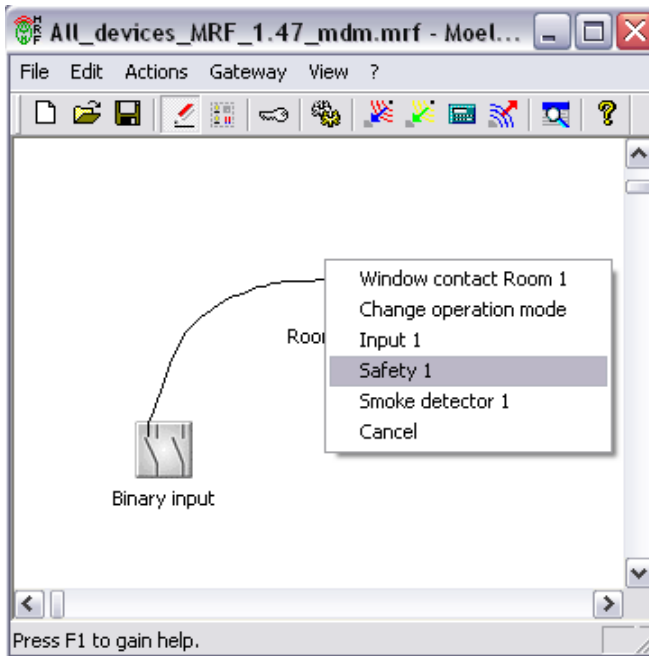
It features:

-) 10 inputs for the warning function to protect against unauthorized entering
-) 5 inputs for the warning function in case of smoke

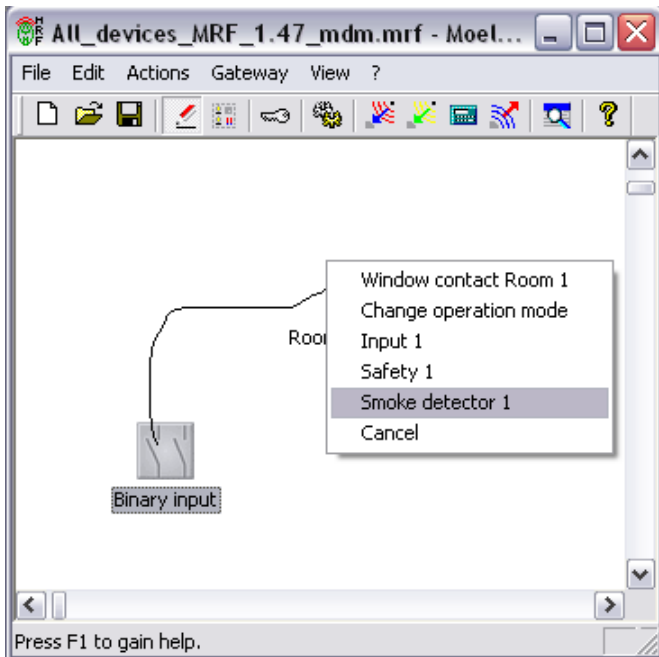
-) 3 zones (zone 1, zone 2, zone1+2)

General information:

All sensors used for the safety function need to be assigned to a safety input at the Room Manager (max. 10 safety inputs). The window contacts of the existing rooms can also be included in the surveillance.



All smoke detectors (via binary input) need to be assigned to a smoke detector input at the Room Manager (max. 5 smoke detector inputs).



The individual zones can be activated / deactivated either with the assigned inputs or with the sensor keys.

All the actuators that are supposed to carry out any actions after an alarm has been triggered need

to be created as an output at the Room Manager.

Also refer to chapter [Room Manager with Safety Function – General Information](#)

Also refer to chapter [Room Manager with Safety Function – Safety Inputs](#)

Also refer to chapter [Room Manager with Safety Function – Smoke Detector](#)

Room Manager with Safety Function – General Information:

This is what the configuration window for the Safety Function – General Information looks like:

You can do the following settings:

Field 1:

This is where the code can be defined for the customer to acknowledge an alarm. It is also possible to either allow or not allow the customer to change the code at the Room Manager.

Field 2:

This selection window will allow you to define what to use for activating/deactivating the safety function of the different zones (zone 1, zone 2, zone 1+2). You can either select the different inputs at the Room Manager or the two sensor keys (left, right).

Field 3:

It is also possible to automatically activate the presence simulation after a predefined time period, provided the safety function has been activated.

Field 4:

If this option has been activated, the Room Manager will give an acoustic alarm once in a minute in case the battery of the safety sensors is low.

Field 5:

This item allows the system to automatically carry out a determined action upon activating/deactivating a safety function (e.g.: Switch the "Signal lamp" on upon activation, switch it off upon deactivation).

Field 6:

This is where you can define what actions should be started in case of an alarm. In case of an alarm it is possible to switch on 2 different outputs for an adjustable time period. It is also possible to activate the acoustic alarm of the Room Manager for an adjustable time period.

Also refer to chapter [Room Manager with Safety Function - Overview](#)

Room Manager with Safety Function – Safety Inputs:

This is what the configuration window for the Safety Inputs looks like:

The screenshot shows the 'RM SA EN' configuration window. It has a tabbed interface with 'Safety inputs' selected. The window is divided into several sections, each highlighted with a red box and a number:

- Field 1:** Safety inputs table with columns for 'Alert', 'On', 'Off', 'Alarm State', 'Activate delayed', 'Expecting cycle receipt in minutes', 'Zone', and 'Input/sensor'.
- Field 2:** Alarm State column.
- Field 3:** Activate delayed column.
- Field 4:** Expecting cycle receipt in minutes column.
- Field 5:** Zone column.
- Field 6:** Input/sensor column.
- Field 7:** Window contact rooms (additionally to safety inputs) section.
- Field 8:** 'Activate' delay time for Leaving/Entering (inputs and window contacts) section.

The 'Safety inputs' table contains the following data:

Alert	On	Off	Alarm State	Activate delayed	Expecting cycle receipt in minutes	Zone	Input/sensor
Alert 1	On	Off	On	<input type="checkbox"/>	20	Zone 1+2	Fernbedienung LCD (Channel:)
Motion Lobby	On	Off	On	<input checked="" type="checkbox"/>	20	Zone 1	Bewegung Flur (Channel A)
Motion Living	On	Off	On	<input type="checkbox"/>	20	Zone 1	Bewegung WZ (Channel A)
Motion Out	On	Off	On	<input type="checkbox"/>	20	Zone 1	Bewegung Balkon (Channel A)
Motion door	On	Off	On	<input checked="" type="checkbox"/>	20	Zone 1	Bewegung Tür (Channel A)
Glass Living1	Yes	No	Yes	<input type="checkbox"/>	20	Zone 2	Glas WZ (Channel A)
Glass Living2	Yes	No	Yes	<input type="checkbox"/>	20	Zone 2	Glas WZ (Channel B)

The 'Window contact rooms' section contains the following data:

Room	closed	opened	opened	opened	opened	Zone
Room 1	closed	opened	opened	<input type="checkbox"/>	20	Zone 2
None	zu	offen	offen	<input type="checkbox"/>	20	Zone 1
None	zu	offen	offen	<input type="checkbox"/>	20	Zone 1

The 'Activate' delay time section contains the following data:

'Activate' delay time for Leaving/Entering (inputs and window contacts)	seconds
20	seconds

This window is set up as follows:

Field 1:

Here you can define a name for the different Safety Inputs. There is a max. of 10 Safety Inputs available. It is also possible to define the texts of the status messages to be displayed.

Field 2:

Under "Status Alarm" you can define in which status the alarm should be triggered.

Field 3:

With "Activate with delay" you have the possibility to activate or deactivate the individual Safety Inputs with a delay after the circuit has been armed. Also refer to Field 8.

Field 4:

Within the time period you preset here, the Room Manager expects to receive a status message from the Safety Input. If the Room Manager does not receive a status message within that preset time, the alarm will be triggered.

Field 5:

Under "Zone" you can assign the Safety Inputs to the different safety zones (zone 1, zone 2, zone1+2)

Field 6:

Here you can display the names of the RF sensors that have been assigned.

Field 7:

In addition to the 10 Safety Inputs you can also add 3 window contacts of the rooms to the Safety Function and keep them under surveillance.

Field 8:

Here you can set the time period for the delay after activating the Safety Function, this means that if the safety function is activated, all the inputs with a preset delay time will only be armed after the preset delay time, whereas all the other inputs will be armed immediately after activation.

Also refer to chapter [Room Manager with Safety Function - Overview](#)

Room Manager with Safety Function - Smoke Detector:

This is what the configuration window for the smoke detector looks like:

RM SA EN

Bluetooth/SMS | Alerts | Text submission: | Calls | Miscellaneous

Room 1 | Inputs | Outputs | Safety generally | Safety | Smoke detector | Energy input EMS | Overview Energy

Smoke detector:

Smoke detector inputs:

	Yes	No	Displayed text:
	ON	OFF	
Smoke Living1	Yes	No	
Smoke Living2	Yes	No	
Smoke Lobby	Yes	No	
Smoke Kitchen	Yes	No	
Smoke Sleep	Yes	No	

Alarm state: Yes

Expecting cycl. receipt in minutes: 20

Input/sensor:

- Rauch wZ (Chann
- Rauch wZ (Chann
- Rauch Flur (Channe
- Rauch Flur (Channe
- Rauch SZ (Channel

☒ Activate beeper for unknown state of smoke detector inputs or for low battery state of smoke detector

Activity when detecting

☒ Siren off after: 3 Minutes

☒ Beeper Room-Manager off after: 3 Minutes

OK Abbrechen Übernehmen Hilfe

The window is set up as follows:

Field 1:

Here you can define the names of the different smoke detector inputs. There is a max. of 5 smoke detector inputs available. In this field you can also define the texts to be displayed in the status messages.

Field 2:

Under "Status Alarm" you can define in which status the alarm should be triggered.

Field 3:

Within the time period you preset here, the Room Manager expects to receive a status message from the smoke detector input. If the Room Manager does not receive a status message within that preset time, the alarm will be triggered.

Field 4:

Here you can display the names of the RF sensors that have been assigned.

Field 5:

If this option has been activated, the Room Manager will give an acoustic alarm once in a minute in case the battery of the sensors is low.

Field 6:

This is where you can define what actions should be carried out in case of an alarm. It is possible to switch on 1 output for an adjustable time period in case of an alarm. It is also possible to activate the acoustic alarm of the Room Manager for an adjustable time period.

Also refer to chapter [Room Manager with Safety Function – Overview](#)

General Information on the Room Manager with Energy Function:

The Energy Function will enable you to record the values of your energy, water, gas etc. consumption and to process and display them at the Room Manager. All the counters equipped with an S0 interface can be connected to the RF system via a Eaton [impulse input](#) and can then be processed at the Room Manager. In addition it also possible to record the electrical energy consumption of the consumers or consumer circuits via the [Energy measuring sensor](#) and to send the consumption values to the Room Manager.

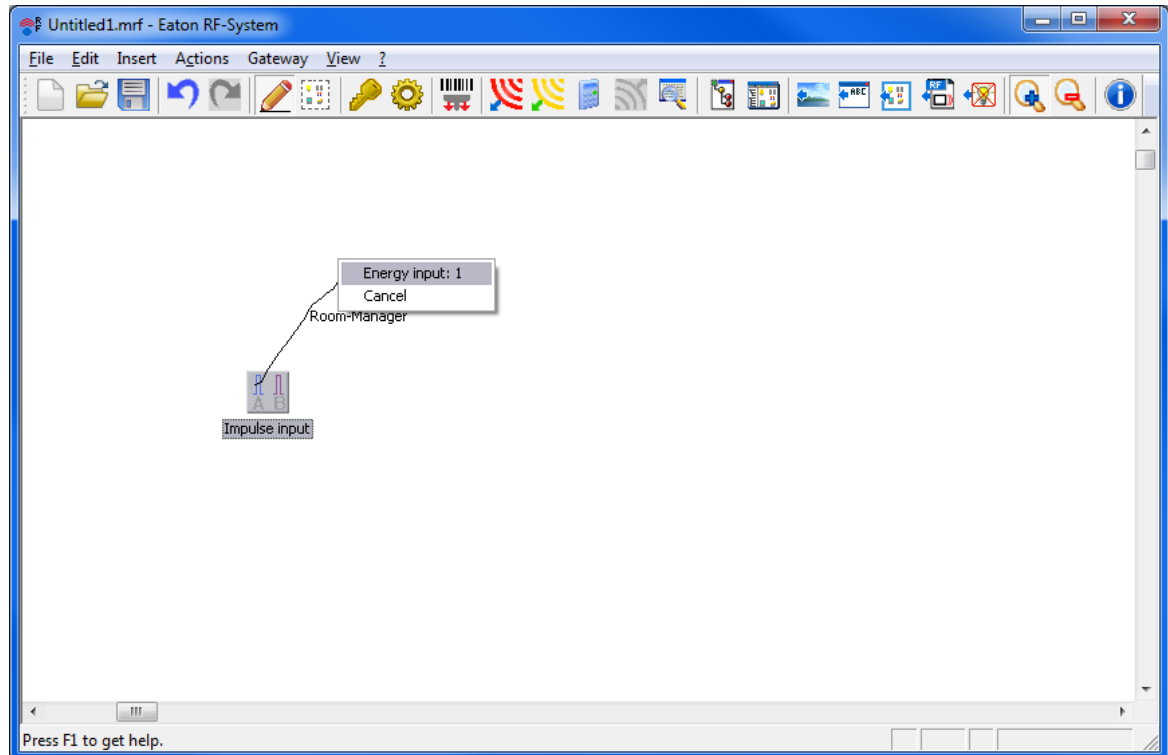
Since MRF 1.60 and RM V38 it is possible to connect the xC MEP device which is connected to a Smart Meter with the Room-Manager.

The following functions can be carried out:

-) Display of values and costs
-) Visualization of trends and forecasts
-) Alarms and starting of actions in case a predefined limit is exceeded
-) 5 Inputs for impulse counter inputs, energy measuring sensors or xC MEP devices

General information:

If a connection between the Room-Manager and a impulse counter input, a energy measuring sensor or a xC MEP device is drawn in the MRF all free energy inputs of the Room-Manager will be displayed (max. 5 energy inputs).



As usual, you will then be able to carry out a more detailed configuration in the Settings of the Room Manager.

Also refer to chapter [Room Manager with Energy Function – Input with Impulse Input](#)

Also refer to chapter [Room Manager with Energy Function – Input with Energy measuring Sensor](#)

Also refer to chapter [Room-Manager with energy function – Input MEP](#)

Room Manager with Energy Function – Input with Impulse Input:

If an impulse input is assigned to the Room Manager with Energy Function, the next free energy input will appear as an option to select. In the Settings window of the Room Manager you will now see a new tab with the number of this energy input.

This is what the Settings window for the energy input with impulse input looks like:

General information:

Name: This is where the name of the energy input can be entered (max. 13 characters)

Connected device: This is where the assigned impulse input channel is displayed

Measuring unit: This is where the units of the variable to be measured can be entered (currently kWh, Wh, m3, l)

Base value: Here you can enter a base value. When displaying the Alltime value, it will be added to the counted value at the Room Manager. This will make sure that the figure displayed at the

counter is the same as the Alltime value displayed at the Room Manager.

New since RM V38:

Generator/Consumer: It is possible to select if the input is connected to a generator or a consumer.

The selection influence the texts which will be displayed on the Room-Manager or rather the text which can be selected at "Display on the Room-Manager" and the calculation of the costs.

Show text or chart page on the Room-Manager – It is possible to display or to hide the text or the chart page of this energy input.

Entering the counting constant:

Format of the counting constant: Select the format of the counting constant, i.e. either "Impulses / Measuring unit" or "Measuring units / Impulse"

Value: Please enter the numerical value of the counting constant here.

Counting constant: Here you can check the counting constant resulting from your entries, it should be equal to the counting constant at the connected counter.

Settings for costs:

Here you can do the settings for your cost calculation.

Currency: Enter the currency in which you wish to have the costs displayed.

Base cost value / Month: Please enter the monthly basic charge for the variable that was counted

Tariff per measuring unit: Please enter the tariff per measuring unit

CO2 per kWh: If you have selected kWh or Wh as a variable to be measured, you can enter the CO2 factor per kWh here.

Threshold value surveillance:

Threshold value: Enter the threshold value here

kWh /: Select the time period that is kept under surveillance

In case of exceeding the value: Here you can set the action that should be carried out in case of exceeding the threshold value.

Display alarm: If this option has been activated and if the threshold value has been exceeded, a short info page will appear at the display of the Room Manager. This info page needs to be acknowledged.

Display at the Room Manager:

In 3 double-lines you can have the different consumption values displayed. The settings made here will be visualized at the display of the Room Manager, but they can be changed at any time again via the Settings menu in the Room Manager.

Possible settings for the display (dependend if consumer or generator is selected):

Values: Energy consumption, Energy production, Costs, Gains, CO2 consumption, Consumption prognosis, Production prognosis, Cost prognosis, Gain prognosis, CO2 prognosis

Time periods: Last hour, 24 hours, since mid-night, 7 days, since the beginning of the week, 30 days, since the beginning of the month, since the beginning of the year, total value, Alltime

Not every period of time can be selected for every value though.

Also refer to chapter [General Information on the Room Manager with Energy Function](#)

Room Manager with Energy Function – Input with Energy measuring Sensor:

If an Energy measuring sensor is assigned to the Room Manager with Energy Function, the next free energy input will appear as an option to select. In the Settings window of the Room Manager you will now see a new tab with the number of this Energy input.

This is what the Settings window for an Energy input with Energy measuring sensor looks like:

General information:

Name: Here you can enter the name of the Energy input (max. 13 characters)

Connected device: Here you will see the assigned Energy measuring sensor

New since RM V38:

Generator/Consumer: It is possible to select if the input is connected to a generator or a consumer.

The selection influence the texts which will be displayed on the Room-Manager or rather the text which can be selected at "Display on the Room-Manager" and the calculation of the costs.

Show text or chart page on the Room-Manager – It is possible to display or to hide the text or the chart page of this energy input.

Settings for costs:

Here you can do the settings for your cost calculation

Currency: Enter the currency in which you wish to have the costs displayed

Base value of costs / Month: Enter the monthly basic charge for the variable that was counted

Tariff per measuring unit: Enter the tariff per measuring unit here

CO2 per kWh: Here you can enter the CO2 factor per kWh.

Surveillance of threshold values:

Threshold value: Enter the threshold value here

kWh /: Here you can select the time period to be kept under surveillance or select the active power directly

In case of exceeding the value: Here you can set the action to be taken in case the threshold value is exceeded

Display alarm: If this option has been activated and if the threshold value is exceeded, a short info page will appear at the Room Manager Display. This info page needs to be acknowledged.

Display at the Room Manager:

In 3 double-lines you can have the different consumption values displayed. The settings made here will be visualized at the display of the Room Manager, but they can be changed at any time again via the Settings menu in the Room Manager.

Possible settings for the display (dependend if consumer or generator is selected):

Values: Energy consumption, Energy production, Costs, Gains, CO2 consumption, Consumption prognosis, Production prognosis, Cost prognosis, Gain prognosis, CO2 prognosis, Present power, present current, present voltage

Time periods: Last hour, 24 hours, since mid-night, 7 days, since the beginning of the week, 30 days, since the beginning of the month, since the beginning of the year, total value, Alltime

Not every period of time can be selected for every value though.

Also refer to chapter [General Information on the Room Manager with Energy Function](#)

Room-Manager with Energy Function - Input MEP:

If a channel of the xC MEP device is assigned to the Room Manager with energy function, the next free energy input will appear as an option to select. In the setting window of the Room Manager you will now see a new tab with the number of this energy input.

Dependend on which channel of the MEP device is assigned different settings are blocked. It is a total energy channel available for which the cost settings are blocked and 4 rate energy channels for 4 different rates.

This is what the setting window for the energy input assigned to the total energy channel of the xC MEP device looks like:

Room-Manager_1

Room 1 | Room 2 | Room 3 | Room 4 | Room 5 | Room 6 | Shading | Inputs | Outputs | Presence simulation | Logic functions | Scenes | Energy-input 1
 Energy-input 2 | Energy-input 3 | Energy-input 4 | Energy general | Overview Energy | Bluetooth/SMS | Alerts | Text template | Calls | Miscellaneous

Name: MEP Total

connected device: MEP-Device (Energy consumption tot: Consumer)

☒ Show the text page of this Energy input on the Room-Manager
☒ Show the graphic page of this Energy input on the Room-Manager

Settings Cost/Gain:

Currency: EUR CO2 per kWh: 0 g/kWh
 price per unit: 0.07 EUR cost basic value / month: 15 EUR

Limit value supervision

Limit value: 0 kWh/ Hour
 for exceeding: Marker Marker 1 to: Off ☐ Display alarm

Display on the Room-Manager

Line 1: Energy consumption total Beginning of day
 Line 2: Power consumption total
 Line 3: current Tariff

OK Cancel Apply Help

This is what the setting window for the energy input assigned to a tariff energy channel of the xC MEP device looks like:

General:

Name: Here you can enter the name of the energy input (max. 13 characters)

Connected device: Here you will see the assigned MEP device channel

Generator/Consumer: It is possible to select if the input is connected to a generator of a consumer.

The selection influence the texts which will be displayed on the Room-Manager or rather the text which can be selected at "Display on the Room-Manager" and the calculation of the costs.

Show text or chart page on the Room-Manager – It is possible to display or to hide the text or the chart page of this energy input.

Settings for costs:

Here you can do the settings for your cost calculation. The costs can be only configured if an xC MEP device rate channel is connected.

Depending on how many different tariffs are used this valuer needs to be divided by this value in order to have the correct value wehn summarizing the costs.

Currency: Enter the currency in which you wish to have the costs displayed

Base value of costs / Month: Enter the monthly basic charge for the variable that was counted

Tariff per measuring unit: Enter the tariff per measuring unit here

CO2 per kWh: Here you can enter the CO2 coefficient per kWh

Surveillance of threshold values:

Threshold value: Enter the threshold value here

kWh /: Here you can select the time period to be kept under surveillance or select the active power directly

In case of exceeding the value: Here you can set the action to be taken in case the threshold value is exceeded

Display alarm: If this option has been activated and if the threshold value is exceeded, a short info page will appear at the Room Manager Display. This info page needs to be acknowledged.

Display on the Room Manager:

In 3 double-lines you can have the different consumption values displayed. The settings made here will be visualized at the display of the Room Manager, but they can be changed at any time again via the Settings menu in the Room Manager.

Settings possible for the display (dependend on if consumer of generator is selected):

Values for xC MEP device total energy channel: total active power consumption, total power production, total energy consumption, total energy production, present tariff

Values for xC MEP device rate enegy channel: Energy consumption, Energy production, costs, CO2 consumption, consumption forecast, production forecast, cost forecast, gain forecast, CO2 forecast,

Time periods: Last hour, 24 hours, since mid-night, 7 days, since the beginning of the week, 30 days, since the beginning of the month, since the beginning of the year, total value, Alltime

Not every period of time can be selected for every value though.

Also refer to chapter [General Information on the Room Manager with Energy Function](#)

Room-Manager with Energy Function - Energy General page:

The page is used as additional display to get a quick overview of the present consumption or production. Further it is possible to define actions for defined consumption or production areas.

Setting possibilities:

Name: Here you can enter the name of the page (max. 13 characters)

Displayed data: Defines which source will be used for the calculations on the display.
(Total power – sum of all energy inputs (active power), active power values of individual energy inputs)

Pos. 1: the present power of the selected source is fixed defined for Pos 1

Pos. 2: the energy consumption of the selected source is fixed defined for Pos 2. The time area can be changed as desired.

Pos. 3: the present energy areas, outdoor temperature (if available), room temperature (if available) can be displayed

Energy Areas: It is possible to define different energy areas. The Room-Manager verifies in which area the source is and depended on the area you can start different actions (switch Markers or Outputs).

Also refer to chapter [General Information on the Room Manager with Energy Function](#)

Room Manager with Energy Function – Overview Page:

At the energy overview page you can display again 3 lines with values. Per line you can select single values or you can combine/sum up to 5 values of the available energy inputs. The settings if an input is a generator or a consumer will be considered. For each line it is possible to define a different time area. Further you have the option to display a chart (Exception: Costs/Gain). The name of each line will be used as main page name of the charts.

The screenshot shows the 'Room-Manager_1' window with the 'Overview Energy' tab selected. The window has a tabbed interface at the top with tabs for Room 1 through Room 6, Shading, Inputs, Outputs, Presence simulation, Logic functions, Scenes, Energy-input 1 through 4, Energy general, Overview Energy (selected), Bluetooth/SMS, Alerts, Text template, Calls, and Miscellaneous. Below the tabs, there is a checkbox 'Show this page on the Room-Manager' which is checked. A text box below it says: 'Here you can set which single data or summarized data will be displayed on the Overview Energy page of the Room-Manager:'. The main area contains three lines for configuration. Each line has a table with four columns: 'Energy data:', 'Time', 'Display Graphic-page:', and 'Name:'. Line 1 is configured with 'Energy production PV' and 'Energy consumption total MEP Total' under 'Energy data:', '24 hours' under 'Time', checked under 'Display Graphic-page:', and 'Energy 1' under 'Name:'. Lines 2 and 3 are also configured with '24 hours' and checked 'Display Graphic-page:', but their 'Name:' fields are empty. At the bottom right are buttons for 'OK', 'Cancel', 'Apply', and 'Help'.

Line	Energy data:	Time	Display Graphic-page:	Name:
Line 1:	Energy production PV Energy consumption total MEP Total	24 hours	<input checked="" type="checkbox"/>	Energy 1
Line 2:	24 hours	<input checked="" type="checkbox"/>	Energy 2
Line 3:	24 hours	<input checked="" type="checkbox"/>	Energy 3

Also refer to [General Information on the Room Manager with Energy Function](#)

Room-Manager with Bluetooth-function – Text template:

The configuration window looks like:

The screenshot shows a software window titled "Room-Manager" with a standard Windows-style title bar (minimize, maximize, close buttons). Below the title bar is a tabbed interface with five tabs: "Room 1", "Bluetooth/SMS", "Alerts", "Text template" (which is currently selected), and "Miscellaneous". The main area of the window is divided into three columns for configuring text templates. Each column has a label, a single-line text input field, and a multi-line text area with five rows. The first column is labeled "Name text 1:" with the value "SMS1"; its multi-line area starts with "Message from RM". The second column is labeled "Name text 2:" with the value "SMS2"; its multi-line area starts with "Attention Alert!!". The third column is labeled "Name text 3:" with the value "SMS3"; its multi-line area starts with "Motion detector is active!!". Below these columns, there is a checkbox labeled "Use text 1 for 'status message-text'" which is checked. At the bottom right of the window, there are four buttons: "OK", "Abbrechen", "Übernehmen", and "Hilfe".

You can define up to 3 predefined SMS texts. It can be selected for sending in the 'alarms' page.

It can also be chosen to use the first message for the beginning of a status message.

Room-Manager with Bluetooth-function - Alerts:

The configuration window looks like:

Room-Manager

Logic functions	Scenes	Safety generally	Safety	Smoke detector	Energy-input 1	Energy-input 2	Energy-input 3
Room 1	Room 2	Room 3	Ventilation	Shading	Inputs	Outputs	Change operation mode
Energy-input 4	Overview Energy	Bluetooth/SMS	Alerts	Text template	Calls	Miscellaneous	

In this window you can define for which events a SMS will be sent. Furthermore you can set the Room-Manager to send a SMS to an additional number if no confirmation is sent within the set waiting time.

For a set waiting time of 0 minutes the Room-Manager will wait 30 seconds for a retake.

☒ Release

If: Marker
 then: Send SMS
☒ wait for confirmation 5 minutes
☒ wait for confirmation 5 minutes

☒ Release

If: Safety alarm
 then: Send SMS
☐ wait for confirmation 5 minutes
☐ wait for confirmation 5 minutes

☒ Release

If: Smoke alarm
 then: Send SMS
☒ wait for confirmation 5 minutes
☐ wait for confirmation 5 minutes

☒ Send warning of low battery states to:

OK Abbrechen Übernehmen Hilfe

Here you can define how the Room-Manager will react on 3 different events.

Possible events are: Marker to ON, Output to ON, Input to ON, Timer to ON, Safety alert, smoke alert

After one of this events happen the Room-Manager will send out a SMS (status text or 3 predefined texts)

After selecting the event you can either select "delayed" or the desired phone number to which the SMS will be sent. If you select "delayed" the RM waits a defined duration before sending out the SMS (max. 120 minutes, 0 minutes = 30 seconds). The SMS will be sent to the phone number that is selected afterwards.

If you chose in the next line "wait for confirmation" after you have selected a number the Room-Manager will wait for a confirmation in form of a call or SMS (with the text "OK") for the desired number of minutes. If no confirmation is received within this time the Room-Manager can send the alarm to another phone number (and if desired also to a third one).

If you activate the option "warning if low battery state:" you can select a number to which a SMS-warning will be sent if one of the battery states on the Room-Manager is low.

Room-Manager with Bluetooth-function - Calls:

The configuration window looks like:

Room-Manager

Logic functions | Scenes | Safety generally | Safety | Smoke detector | Energy-input 1 | Energy-input 2 | Energy-input 3
Room 1 | Room 2 | Room 3 | Ventilation | Shading | Inputs | Outputs | Change operation mode | Timer | Presence simulation
Energy-input 4 | Overview Energy | Bluetooth/SMS | Alerts | Text template | Calls | Miscellaneous

In this window you can set the phone call options of the Room-Manager. A defined action will be executed if one of max. 5 numbers calls the Room-Manager.
Furthermore for every event a report by a short phone call (without speech) can be assigned.

Start action by phone call

☒ Release

Outputs SA 2 On for 0 minutes

Nummer1 [+4367689951287]

Add number Remove number

Nummer2 [+436766055365]
Nummer1 [+4367689951287]

Room-Manager signalizes event by call

☒ Release

If Outputs SA left On

then call Nummer1 [+4367689951287]

OK Abbrechen Übernehmen Hilfe

Start action by phone call:

Here you can define an event which is executed by the Room-Manager if one of the defined numbers is calling. A short call to the Room-Manager is enough, the call will not be picked up. As event you can select a desired output or marker to be set to ON, OFF or being toggled.

Room-Manager signalizes event by call:

You can define to call a desired phone number if an event will take place. The call will only last for some seconds and the Room-Manager will hang up afterwards by itself. The event can be triggered by a marker or output that is switched ON, OFF or toggled.

Room-Manager with Bluetooth-function – Common settings:

The configuration window looks like:

The following settings can be done:

‘Enable control and request via SMS’ – If this option is deactivated nothing can be controlled or requested by SMS commands

‘Password for SMS interaction (4-16 characters)’ – Enter a password that has to be used for every request/control SMS that is sent to the Room-Manager. See also Syntax of SMS-commands

‘Bluetooth visibility On’ – If this option is activated the Room-Manager will be found as a Bluetooth device if you search for active devices

‘Automatically generate Bluetooth-passkey’ – If this option is activated the key that is used to establish a connection to another device is generated automatically.

“Enter passkey” – You can define a passkey manually, only available if the passkey is not generated automatically

‘Maximum number of SMS per day’ – You can define the maximum number of SMS that can be sent per day (0 = sending of SMS is deactivated, infinite = number of SMS is unlimited)

‘Set target-phone number for SMS-sending’ – You can define up to 5 different phone numbers that can be used for the different RM bluetooth functions

‘Answer-SMS for wrong syntax or password’ – The Room-Manager will answer to a wrong request/control-SMS so the user knows that it has not been understood

'Set/interrogate marker by SMS' – If this option is activated also state of markers can be requested and set by SMS-commands

'Shading can be controlled by SMS' – If this option is activated also the state of shadings can be controlled by SMS-commands

To be able to operate inputs and outputs by SMS-commands use the check boxes on the output-/input-configuration page.

'Mobile phone selection' – Manufacturer and type of the mobile phone can be selected here ,
ATTENTION: The file "handy.txt" must be located in the same directory of the MRF program to be able to select anything here.

Syntax from User-SMS for questioning and controlling of objects:

Beginning of every SMS: ":<Password> "

afterwards: "<object name>"

following:	for request	"?"
	for control	"=<state>!"

There is the possibility to request or control more than one object with only 1 SMS.

Examples:	":1234 R1?"	Requesting the state of Room 1
	":1234 O2=0!"	Switches output 2 to OFF
	":1234 R1? O1=1! I?"	Requests the state of Room 1 and every input
		and switches output 1 to ON

If more than one objects is requested, every information is integrated in one answer SMS or it is separated in more SMS if the length exceeds a maximum of 160 characters.

<Password>:

4-16 characters alpha numeric, can be set in the MRF configuration window or in the Room-Manager, is immediately following the ":" and ends with the first blank space afterwards

<<Object name>:

The object name defines which object should be operated, you can use either the full name of the object or a short form.

Object name	question/switch	possibl. States	Description
R1, R2, R3 or <room name>	requesting only	-	"Rx?" or "<Room name>?" -> The state of a single room is requested - Only known values will be sent (Room temperature, humidity, window state, operation mode, holiday state)
C	questioning only	-	"C?" -> The state of the presence simulation and the safety function is requested
I	requesting only	-	"I?" -> The state of every input is requested (SMS checkbox in the input window has to be activated)
O, O1-O10 or <output name>	requesting/switching	0, 1, 2-100	"O?" -> the state of all outputs is requested (if the SMS checkbox in the output window is activated); "Ox=<state>!" or "<output name>=<state>!" -> a single output is set to this state (only if the SMS checkbox is activated in the configuration window)
F, F1-F10 or <marker name>	requesting/switching	0, 1	"F?" -> the state of all know markers is requested; "Fx=<state>!" or "<marker name>=<state>!" -> a single marker is set to this state (only if the SMS checkbox is activated in the configuration window)
S1-S3 or <shading name>	switching only	0, 1	"Sx=<state>!" or "<Shading>=<state>!" -> s single shading output is set to this state (1=open, 0=close)
E1, E2, E3, E4	requesting only	-	"Ex?" -> the displayed values that are shown on the Room-Manager for a single energy-input are requested
OPTYPE	switching only	auto, comfort, standby, night, frostheat, off	"OPTYPE=<state>!" -> The operation mode of all rooms is set to this state
OPMODI	switching only	heat, cool, heatandcool	"OPMODI=<state>!" -> The mode of all rooms is set o this state
SSTATE	switching only	Zone1, Zone2, Zone1+2, off	"SSTATE=<state>!" -> The safety function is set to this state
V	switching only	0, 1-100	"V=<state>!" Sets the holiday for all rooms (duration depends on state)
H	requesting only	-	"H?" -> The help is requested, you receive detailed description about the SMS commands

<State>:

state	description
0	Off, holiday cancelled
1	On, 1 day holiday
2-100	2-100% (only for analoge outputs), number of days holiday
on	On
off	Off, Safety deactivated
auto	Operation mode: automatic
comfort	Operation mode: comfort
standby	Operation mode: standby
night	Operation mode: night
frostheat	Operation mode: Frost-/heat protection
heat	Mode: heating
cool	Mode: cooling
heatandcool	Mode: Heating and cooling
Zone1	Safety: Zone 1 activated
Zone2	Safety: Zone 2 activated
Zone1+2	Safety: Sone 1 + 2 activated

Syntax of RM to user:

requested object	answer from Room-Manager
R1, R2, R3 or <room name>	"Rx(<Room name>): <Value: Room temp.>C, <Value: humidity>%rF, <Text: window> <State: window>, <State: operation mode>, <State: mode>, <Text: outdoor temp.> <value: outdoor temp.>"
C	"Room-Manager <Text: common>: <Text: PRE-simulation> <State: PRE-simulation>, <Text: safety> <State: safety>, <Text: holiday> <State: holiday>"
I	"Inputs: I1(<Name: input 1>)=<State: input 1>, I2(<Name: input 2>)=<State: input 2>..."
O	"Outputs: O1(<Name: output 1>)=<State: output 1>, O2(<Name: output 2>)=<State: output 2>..."
F	"Marker: F1(<Name: Marker 1>)=<State: Marker 1>, F2(<Name: Marker 2>)=<State: Marker 2>..."
E1, E2, E3, E4	"Ex(<Name: Energy input x>): <value: Ex 1.line> <Text: Ex 1.line>, <value: Ex 2.line> <Text: Ex 2.line>, <value: Ex 3.line> <Text: Ex 3.line>"
H	"SMS-commands: Every SMS has to begin with: <password>; following commands are - for questioning status: R1?-R3? (single Rooms), I? (all inputs), O? (all outputs), F? (all markers), E1-E4 (single Energy-inputs), C? (common) - for switching: Command: <Password> <Object>=<Status>! (Status: 0, 1, 2-100)"

Basic information for Room-Manager Bluetooth:

The primary function for the Room-Manager Bluetooth is:

-) External control (via SMS) of Room-Manager objects (Outputs, shading, operation mode,...)
-) Sending of state information-SMS if requested by user
-) Triggering defined actions on the Room-Manager if a call is received
-) Sending of alert-SMS if defined events will occur
-) Triggering a call from the Room-Manager to a defined phone number if a defined event will occur
-) Display of up to 5 received Text-SMS (for information purpose)

By using the integrated Bluetooth-module the Room-Manager establishes a connection to a Bluetooth-mobile phone in its immediate surrounding. Over that mobile phone the Room-Manager then can communicate via GSM with other mobile phones (Sending/receiving SMS, Execute/receive calls,...).

To establish a connection to a mobile phone you have to first select the manufacturer and phone type in the MRF configuration window 'Bluetooth/SMS' and load the information to the Room-Manager.

Because not every mobile phone is acting the same it is recommended to only use devices that has been tested by Eaton.

The real connection to the mobile phone must be done by using the Room-Manager menu 'Bluetooth' and the command 'Search for devices'.

Also see:

[Room-Manager with Bluetooth-Function – Common settings](#)

[Room-Manager with Bluetooth-Function - Calls](#)

[Room-Manager with Bluetooth-Function - Alerts](#)

[Room-Manager with Bluetooth-Function – Text template](#)

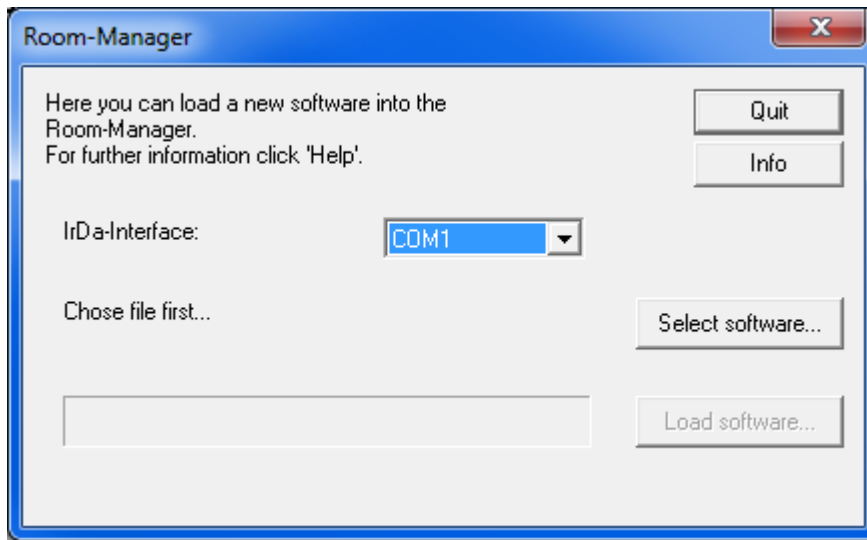
[Syntax for Request/Control by SMS](#)

Software download over IrDA-interface

To update the software of your Room Manager do the following:

1. Scan the Room Manager that you want to update with the MRF software
2. Make sure that you have the IrDA-interface of you PC/laptop activated.
3. Activate the IrDA-interface of you Room Manager by „Miscellaneous -> For the installer -> Software update“, you now have 2 minutes time to establish connection between your PC and the Room Manager.
4. Establish intervisibility between the IrDA-interface of your PC and the Room Manager now
5. Now use the start menu of your operating system to: „Start -> Configuration -> System configuration -> Telephone and modem options -> Register: Modems“. A „standard mode over IR-link should be displayed.
6. In the row „assigned to“ you can see which COM-interface number your Room

- Manager has been connected to.
7. Now go back to MRF and right click on your Room Manager and select „Load new software...“
 8. The following dialog window is shown:



9. Select the file you want to download (*.rm)
10. Select the correct COM-interface number
11. Click on „Load software“

If the software has been loaded successful a window pops up that informs you and the Room Manager restarts.

You have to rescan the Room-Manager so that the MRF eventually detects changes made by the software update!

Also see [Overview of the Room Manager](#)

Info about the timer programmes of the Room Manager

The Room Manager mainly uses timer programmes for controlling operation modes with time based functions.
Dependant for what function the timer programme is used the dialog windows are different.

Window for the timer programme of a room:

Define the timer programme for the selected room.
For further information click 'Help'.

Setpoints: ☒ Comfort ☐ Standby

Day	Mode	Start	End
Monday:	Comfort	6 0	22 0
Tuesday:	Comfort	6 0	22 0
Wednesday:	Comfort	6 0	22 0
Thursday:	Comfort	6 0	22 0
Friday:	Comfort	6 0	22 0
Saturday:	Comfort	6 0	22 0
Sunday:	Comfort	6 0	22 0

Buttons: OK, Abort, Info

As you can see in the picture for every day you can set 3 different time spans with different operation modes. Please note, if you would like to set a time over midnight you have to separate it in 2 time spans

One before midnight and one after midnight.

The operation mode outside of a time span is always „Night“.

Also see [Overview of the Room Manager](#)

Motion detector



The motion detector detects movement and sends RF-commands to its assigned devices.

Every actuator (switching actuator, dimming actuator, shutter actuator, analogue actuator) can be controlled by the motion detector and information can be sent to the Room Manager, Home Manager and the Comm.-interface.

Channel A is the detection output and sends depending on the ambient light value a ON command if movement is detected and after a adjustable time when there is no new movement the channel sends the OFF command.

Channel B is immediately activated independent from the ambient light level and after a fix time of 120 seconds automatically deactivated if no more movement is detected in this time span.

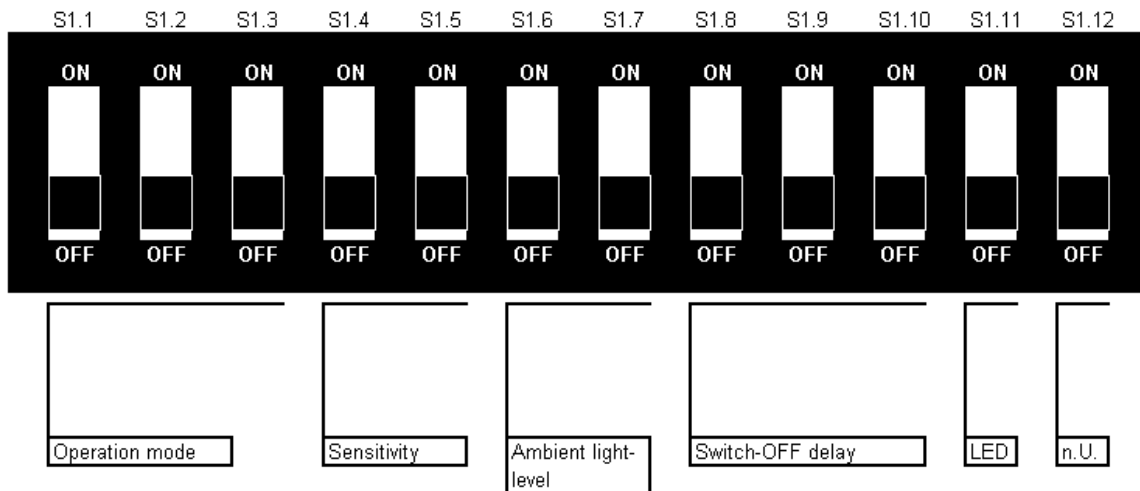
Channel B mainly is used for alarms.

The activated time will be retriggered if new movement is detected within this time span.

By using the DIP-switches in the device Channel A and B can be activated and deactivated separately.

Also the light value range (Night, Dawn, Day & Night) can be set by the DIP-Switches.

Movement is only detected if the actual light value is within the set light level.



Setting of Delay time for Channel A:

The Switch-Off delay time for channel A can be set to the following values:

S1.8	S1.9	S1.10	Time
OFF	OFF	OFF	30 sec.
OFF	OFF	ON	1 min.
OFF	ON	OFF	2 min.
OFF	ON	ON	3 min.
ON	OFF	OFF	5 min.
ON	OFF	ON	10 min.
ON	ON	OFF	20 min.
ON	ON	ON	30 min.

If movement is detected the delay time begins to run and after this time the channel automatically switches OFF. Now if new movement is detected in this time the delay time begins to run new. So for example the light is at least ON for the defined delay time if no new movement is detected.

Setting of ambient light level:

S1.6	S1.7	Ambient light level
OFF	OFF	Night
OFF	ON	Dawn
ON	OFF	Day & Night
ON	ON	n.U.

Movement is only detected if the actual light value is within the set light level.

Setting of motion sensitivity:

S1.4	S1.5	Sensitivity
OFF	OFF	1 Impuls
OFF	ON	3 Impulses
ON	OFF	5 Impulses
ON	ON	7 Impulses

The impulses specifies how often a movement has to be detected before the motion detector reacts.

If the setting is 1 impulse the motion detector reacts immediately on movement. If the setting is 7 impulses, 7 movements has to be detected before it reacts.

Setting of the operation mode for both channels:

Mode	S1.1	S1.2	S1.3	Channel A	Channel B
Configuration	OFF	OFF	OFF	deactivated	deactivated
	OFF	ON	OFF	activated	deactivated
	OFF	OFF	ON	deactivated	activated
	OFF	ON	ON	activated	activated
Operation	ON	OFF	OFF	deactivated	deactivated
	ON	ON	OFF	activated	deactivated
	ON	OFF	ON	deactivated	activated
	ON	ON	ON	activated	activated

The mode configuration is used in the basic mode to assign the motion detector to actuators. The channel of the Motion detector always is equal to the state of its DIP-switch.

When you push the activation key now the following command is sent (if only channel A is ON):

„Motion detector (Channel A) sends <ON> to everyone“

Same goes for channel B. So that's how you can assign the motion detector to actuators or activate it for scanning in the comfort mode.

When you do a long key press of the activation key the channel that's DIP-switch is ON sends an OFF command. So that's how you can unassign a connection in the basic mode.

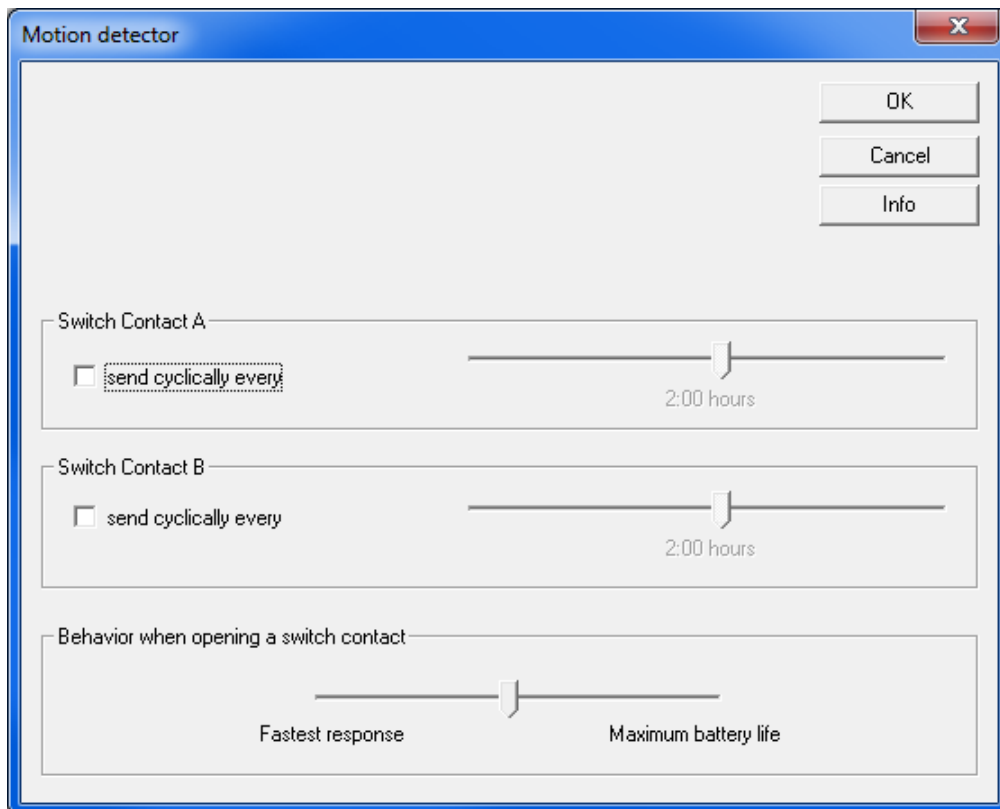
In the mode operation the channels are activated for operation and the state of each channel is only determined by movement detection. Every single channel or both channels can be activated or deactivated.

Setting for the Detection-LED:

S1.11	Detection-LED
OFF	deactivated
ON	activated

With the 1.11 DIP-switch you can determine if the detection-LED lights every time movement is detected.

In the comfort mode the motion detector is handled like a binary input in mode 2. So the assignment to other devices is very similar.



You can set if channel A and/or channel B should be send cyclically and how fast a RF-command is sent.

You can only scan the motion detector by pushing the activation key. The motion detector has to be set to configuration mode and at least one channel should be activated.

After configuration is done the device can be mounted. Please note that all DIP-switches are set to the desired states (mode operation,...).

Communication interface



The communications interface is used to enable the Eaton wireless system to communicate with the PC, e.g. using display software or a different control system.

Actuators and sensors are allocated by means of datapoints as in the Home Manager. The interface itself merely serves as a communication tool, whilst the process is controlled by means of the software in the connected device.

Allocations from devices can be made in Comfort Mode, but also function in Basic Mode. When connecting the communications interface to a PC for the first time using a USB, an installation wizard opens to install the necessary USB driver (see below).

Firmware update

The communications interface firmware only functions via USB (not RS232).

Update sequence

Proceed as follows to load the latest firmware in the communications interface:

1. Connect the communications interface to a Windows PC using a USB (not via RS232). If this is the first time that you are connecting to a PC, a driver installation window will open. Simply click on "Continue" or OK. The driver which is installed is the standard windows HID driver which is normally included in the operating system. The system may then need to be restarted.

2. Download file [setup_ci_update.zip](http://www.moeller.at/de/service/download.html) (you will find a link at <http://www.moeller.at/de/service/download.html>)
3. Unzip the zip file and run file "setup_ci_update.msi".
4. Follow the instructions in the installation wizard.
5. Run the update tool: Start – Programs – Moeller – Moeller CI Update – Moeller CI Update
6. You will also find a readme file on updates in this location. You can consult this file in the event of any queries.

Checking the firmware version and revision

To check the version, run "Moeller CI update" and click on the device in the list. All values and properties for the device are displayed here.

Special cases:

Checking more than 100 devices:

For projects with more than 99 devices (maximum 99 datapoints per communications interface), it is possible to use an additional communications interface.

Connecting the communications interface via LAN (to the PC)

In some cases it may be that the communications interface cannot be positioned in the vicinity of a PC. However, a USB connection cannot be more than 6 m long!

A so-called "USB device server" can be used in this situation for PC applications; this functions in the same way as a printer server which is able to connect normal printers via a network.

The server can be connected to a network via Ethernet. A USB connection is also provided to connect the communications interface.

In this case, you will have to install a special driver which is available from the device server manufacturer. The operating system thus creates a virtual USB interface. The communications interface is then shown as a device which is connected to the virtual interface. It makes no difference to the Homeputer software whether the communications interface is connected to a virtual or a "real" USB interface. Several communications interfaces can also be connected to one device server (via a USB hub) or several device servers can be connected to one communications interface.

Eaton has tested this function with the following device servers:

- silex SX-2000U2 (connection via LAN cable)
- silex SX-2000WG (connection via LAN cable or via WLAN)

Please visit the manufacturer's website for more detailed information:

<http://www.silexeurope.com/euro/products/network/usb/index.html>

Additional information

Here are a few practical tips and answers to frequently asked questions:

Status messages:

Each actuator is able to send a status message (e.g. displaying its current dimming value, etc).

However, as status messages cannot be routed by the system, the communications interface must be in the actuator's direct reception range.

RF optimisation

The xComfort RF-System is specially designed for single family households and smaller buildings.

In projects with more than 50 devices, please ensure that the position of the communications interface is as central as possible to ensure that almost all the devices are in direct reception range (for receiving status messages) and to avoid the need for routing too much information to the communications interface. If the communications interface is in a bad position and thus does not have optimum wireless connections with most of the devices, a great deal of information will have to be routed from both sides, which can lead to data losses in the worst case scenario. In case of doubt, please consult your system partner directly.

Group switching

As it is not possible to send more than one command every two seconds in the communications interface, it is advisable to allocate several actuators to the same datapoint and not to switch every device individually. You can find further information on the subject of multiple switching here.

Please make sure that the datapoint for multiple switching is not the same as for individual

switching of an actuator.

FAQs

Why are there two different interfaces, CRSZ-00/01 and CKOZ-00/03?

The RS232 interface, CRSZ-00/01, is for commissioning the system in Comfort Mode via the MRF software and is used solely for this purpose. The device is battery operated, but can also be supplied or loaded by the mains unit provided.

Communications interface CKOZ-00/03 was specially developed for continuous stationary operation and acts as an interface between the wireless system and other systems (PC, other bus systems, etc). No external power supply is required when operating via USB. However, if the interface is operated via the RS232 interface, a special RS232 set is required for operation (CKOZ-00/04 or CKOZ-00/05).

Support

Please contact the following in the event of problems:

support@xcomfort.at

Analog input



The analog input is a mains-powered sensor and can control all xComfort actuators (switching actuator, dimming actuator, shutter actuator, analog actuator) or it can send a measured value (e.g. 0-100% according to settings) to the Home Manager, Room Manager or communications interface.

As this is a mains-powered device, it is automatically detected when scanned providing that you are within its reception range.

It has two inputs (Channel A, Channel B) for external sensors. 4 different input types can be selected via the configuration window: 0-10 V, 0-20 mA, 4-20 mA und PT1000.

The measurement range for each channel can be set in the MRF for the respective device (e.g. 0-10000...).

As for the room controller and temperature input, it can send a switching command, the converted measured value over the measurement range or a direct percentage (0-100%, limits adjustable, inversion option) if a set threshold is exceeded or not reached.

Both inputs (A und B) are independent from each other and can be treated separately.

Send switching command:

Analog Input

Channel A

0 bis 10 Volts Measured value: 0 till 100

☒ Send switching commands Switching point: 50 Hysteresis: 5

☐ Send value

☐ Send percentage value

☐ send cyclically every 2:00 hours

Channel B

0 bis 10 Volts Measured value: 0 till 100

☒ Send switching commands Switching point: 50 Hysteresis: 5


☐ Send value


☐ Send percentage value

☐ send cyclically every 2:00 hours

OK Cancel Info

In this mode a switching command is sent. The time at which the switching command is sent depends on the following criteria:

If the measured value is lower than the pre-set switching point, the command "below"  is sent.

If the measured value exceeds the pre-set switching point, the command "over"  is sent. But it is also possible to set a hysteresis value (standard 5).

I.e.: the command ON will not be sent until the measured value minus the hysteresis value is higher than the switching point.

Send measured value:

The screenshot shows a software window titled "Analog Input" with a blue title bar and a red close button. It contains two identical configuration sections for "Channel A" and "Channel B".

Channel A Configuration:

- Channel A:** Labeled at the top.
- Range:** A dropdown menu set to "0 bis 10 Volts".
- Measured value:** Two input fields showing "0" and "100" with the text "till" between them.
- Send switching commands:** An unselected radio button.
- Send value:** A selected radio button.
- Send percentage value:** An unselected radio button.
- send cyclically every:** An unchecked checkbox.
- Slider:** A horizontal slider between "Max. precision" and "Min. sending", with a marker positioned towards "Max. precision".
- Time:** A slider below the checkbox, with a marker at "2:00 hours".

Channel B Configuration:

- Channel B:** Labeled at the top.
- Range:** A dropdown menu set to "0 bis 10 Volts".
- Measured value:** Two input fields showing "0" and "100" with the text "till" between them.
- Send switching commands:** An unselected radio button.
- Send value:** A selected radio button.
- Send percentage value:** An unselected radio button.
- send cyclically every:** An unchecked checkbox.
- Slider:** A horizontal slider between "Max. precision" and "Min. sending", with a marker positioned towards "Max. precision".
- Time:** A slider below the checkbox, with a marker at "2:00 hours".

Buttons: On the right side of the window, there are three buttons: "OK", "Cancel", and "Info".

The measured and converted value is sent by menu item "Send measured value". You can select how many times (and how precisely) the value should be measured and sent, and whether it is to be sent as part of a cycle (adjustable by means of a slider control).

Send percentage:

In this case the direct measured value (0-100%) is sent to a dimming actuator or analog actuator. An upper and lower limit can be set (if the measured value falls outside these limits, the limit value is the maximum value sent) and the value can be inverted. This setting can be used to control the brightness in a room as a function of external brightness, for example....

2-fold remote control:

This device is a battery-powered sensor which can control all xComfort actuators (switching actuator, dimming actuator, shutter actuator, etc.), but it can also send commands to the Home Manager, Room Manager, etc. (e.g. to start complex processes).

The functions of this remote control are almost identical to a 2x button.




In the case of commands from the 2x remote control, we have to distinguish between the right and left switch rocker.

The LED on the top left side shows when a command is sent (flashes briefly once) and when the command has been acknowledged by the destination device (or the next device in the event of routing) (flashes briefly twice). When the command has been successfully sent and acknowledged, the LED then flashes three times.

Each rocker sends the following commands:



: short press on the button, top

- : long press on the button, top
- : long press on the button, bottom
- : short press on the button, bottom

12-fold remote control:



The 12x remote control (sensor) can control all xComfort actuators (switching actuator, dimming actuator, shutter actuator, etc.) and can also send a command to the Home Manager RF, Room Manager, etc.

The remote control has 6 pre-selection buttons and 1 switch rocker and is equivalent in terms of functional scope to 12 single buttons.

Each pre-selection button has 2 levels. There are 2 factors which determine which channel you are in: the number of the pre-selection button and how often this is actuated. This leads to a total of 12 channels.

The yellow (left) and green (right) LED show which level you are in. If you actuate a pre-selection button once, the yellow LED lights up briefly; if you actuate it twice, the green LED lights up briefly. The switch rocker functions as a single button and should be regarded as 1 sensor channel.

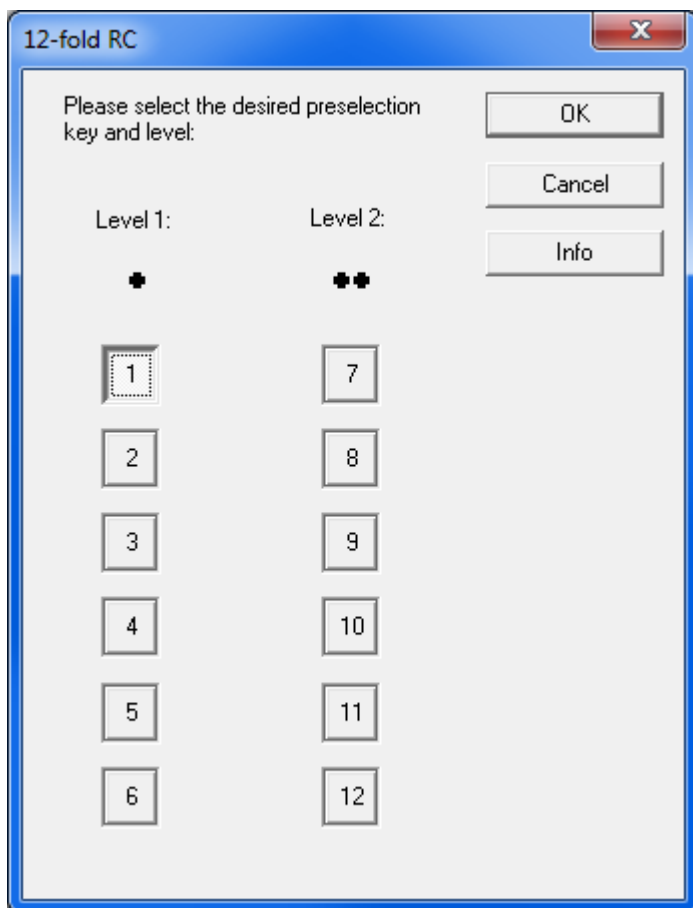
A command is sent when the switch rocker is actuated. The LEDs on the left and right show when a command is sent (flashes briefly once) and when the command has been acknowledged by the destination device (or the next device in the event of routing) (flashes briefly twice). When the command has been successfully sent and acknowledged, the LED then flashes three times. If this all happens in a channel in level 1, the left LED is used for this process, whilst the right LED is used for level 2.

Example:

Preselection	operations	Channel	LED
1	1x	1	yellow
1	2x	7	green
2	1x	2	yellow
2	2x	8	green
3	1x	3	yellow
3	2x	9	green
4	1x	4	yellow
4	2x	10	green
5	1x	5	yellow
5	2x	11	green
6	1x	6	yellow
6	2x	12	green

Drawing a [connection](#) between the 12x remote control and an actuator causes a selection window to open.

It is usually set up as follows:



The number of the pre-selection button (1 to 6) is shown to the left, whilst the level (1 and 2) is shown at the top. You can then choose the appropriate channel which you wish to allocate.

The command button (rocker) of the 12x remote control can send the following commands:

- : short press on the button, top
- : long press on the button, top
- : long press on the button, bottom
- : short press on the button, bottom

The drop-down menu and settings enable you to see the actuators which already have a connection.



Routing actuator:



The routing actuator is a device which is incorporated in the system and which can be treated in the same way as any other mains-powered device. Any number of sensor channels can be allocated to this actuator (maximum 15), although these connections do not have any function and are mainly intended to ensure more secure transmission in the event of multiple switching operations, for example. Like most mains-powered devices, the routing actuator can handle up to 13 routing paths.

Connections from measured values (temperature, analog value) can be dragged to the routing actuator to include this in a multiple circuit with a Room Manager or Home Manager.

The greatest advantage of the routing actuator is its routing function in Basic Mode (see installation instructions for further information).

New since Software Version 9.3:

Routers with a software version of 9.3 or higher are Router of the new generation.

The general performance compared to the old router is increased tremendously (doubled the number of possible routing entries and connections, scan/load speed increased)

The basic functionality is similar to the old type CROU-00/01 but the new generation now has 2 different types.

CROU-00/01-S – Standard type, replaces the old Router CROU-00/01

CROU-00/01-SL – Special type with integrated logic function

Both types support the resend of old Status messages.

CROU-00/01-SL – Logic functions:

This new router types offers the possibility to process the information of connected sensors in up to 5 logic functions and send out ON/OFF by an own Logic output channel or use the information internally.

Right clicking the device symbol and selecting 'Settings' will open the configuration window for the

logic function.

The screenshot shows the 'Routing actuator' configuration window with the following settings:

- Logic 1:** Enabled. Condition: Inputs AND Bin Batt (Channel A) ON. Action: Output 1 (Switching actuator) On. Minimum time: 5 Sec. Hysteresis: 0. Send cyclically: 1:00 hours.
- Logic 2:** Enabled. Condition: Inputs GREATER THAN Temperature sensor (Channel A) Set value 30. Action: Marker 1 Off. Minimum time: 5 Sec. Hysteresis: 2.
- Logic 3:** Enabled. Condition: Outputs AND Output 1 (Switching actuator) On. Action: Output 2 (Dimming actuator) On. Minimum time: 0 Sec. Hysteresis: 0. Send cyclically: 2:00 hours.
- Logic 4:** Disabled. Condition: None. Action: Output 1 (Switching actuator) Off. Minimum time: 0 Sec. Hysteresis: 0. Send cyclically: 1:00 hours.
- Logic 5:** Disabled. Condition: None. Action: Output 1 (Switching actuator) Off. Minimum time: 0 Sec. Hysteresis: 0. Send cyclically: 1:00 hours.

Buttons at the bottom: OK, Cancel, Info.

Activating the option 'Release Logic X' will enable the logic for configuration. You can choose the desired logic operation (AND/OR/GREATER THAN/LOWER THAN/EQUAL), the input variables, a hysteresis, a minimum time and the resulting action.

Generally all sensor output channels of existing xComfort channels can be used as input variables of a logic (exception Binary input Mode 1 channels). Additionally one of the internal Markers or the status of one of the 5 output channels can also be selected (if available).

Depending on the selection of the logic operation the second input variable can also be a fixed value set by the user (only for analog logic operations).

For the comparison of analog values a hysteresis can be set (+/- 1/2 of the hysteresis value will be used when comparing the input variables).

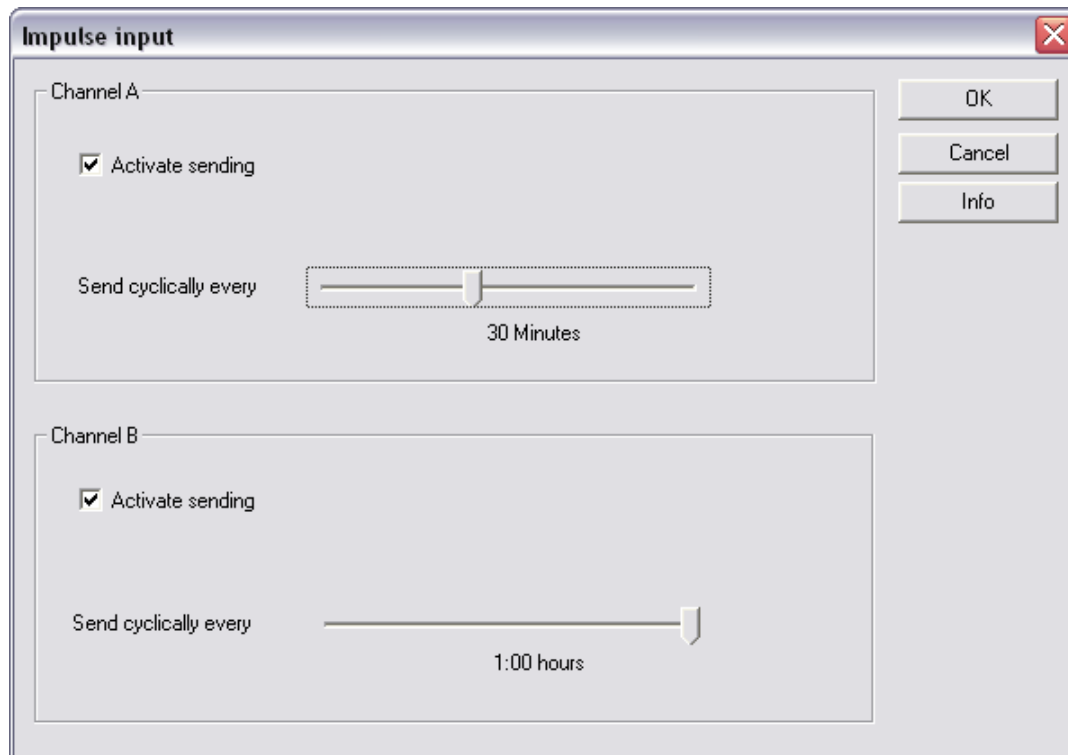
An optional minimum time will set how long the configured status needs to be active to execute the resulting action.

If one of the 5 Logic outputs is used as output variable cyclic sending can be activated and the cyclic time can be set between 1h and 18h.

Impulse input:

The impulse input counts the impulses at its 2 separate S0 interfaces and forwards the readings to a Room Manager with Energy function.

It features 2 separate channels independent from each other which can be configured by means of the MRF.



Activate sending: Here you can select whether or not the value counted for this channel should be transmitted.

Send all cyclically: Here the cycle time for transmission can be set between 10 minutes and 1 hour.

The impulse input has two 32 bit counters (1 for each channel) and counts all impulses at its S0 inputs in absolute figures until they are reset or until they are supposed to run over. The maximum counting frequency of the impulses is defined in the Standard for S0 interfaces, it is 16 Hz.

All the other settings, such as the unit of the variable to be measured or the counting constant of the connected counter can be done at the Room Manager, in the Settings window for the Energy input.

Also refer to chapter [Room Manager with Energy function – Input with Impulse input](#)

Remote Control with Display

The Remote Control with Display is a 12-channel remote control with LCD display and a timer function for up to 3 timers.

The name of each output can be freely defined or selected from a predefined list of names. Both on the remote control and in the MRF it is possible to select which outputs should and which ones should not be visible for operation.

If you press a key, the remote control will change from standby to operating mode and the display will be switched on. When no further action is carried out, the remote control will switch to standby mode again after a pre-defined time (default is 10 seconds).

All timers will of course continue to operate in standby mode.

Also refer to:

[Remote Control with Display - Functions](#)

[Remote Control with Display - Timer](#)

[Remote Control with Display - Miscellaneous](#)

Remote Control with Display - Functions:

This is where you can define the names and what to use for operating the assigned functions. You can also see which actuators are assigned to the respective functions.

The screenshot shows a window titled "RC LCD" with a red close button in the top right corner. Inside the window, there are three tabs: "Functions", "Timer", and "Miscellaneous". The "Functions" tab is selected. Below the tabs, there is a text box that reads: "In this window the name and the operation options can be set for all 12 outputs. In the row output/actuator you can see which actuator is assigned to the output." Below this text is a table with three columns: "Name:", "visible for operation", and "Output/actuator:". The table contains 12 rows of data.

Name:	visible for operation	Output/actuator:
Light	<input checked="" type="checkbox"/>	Dimming actuator
Heating	<input checked="" type="checkbox"/>	Switching actuator
Shutter	<input checked="" type="checkbox"/>	Shutter actuator
Device 4	<input checked="" type="checkbox"/>	---
Device 5	<input checked="" type="checkbox"/>	---
Device 6	<input checked="" type="checkbox"/>	---
Device 7	<input checked="" type="checkbox"/>	---
Device 8	<input checked="" type="checkbox"/>	---
Device 9	<input checked="" type="checkbox"/>	---
Device 10	<input checked="" type="checkbox"/>	---
Device 11	<input checked="" type="checkbox"/>	---
Device 12	<input checked="" type="checkbox"/>	---

At the bottom of the window, there are four buttons: "OK", "Abbrechen", "Übernehmen", and "Hilfe".

Also refer to chapter [General Information on the Remote Control with Display](#)

Remote Control with Display - Timer:

A maximum of 3 timers can be linked with each output. Under "Time Programme" you can define the time period for the respective timer to stay ON.

The screenshot shows a software window titled "RC LCD" with a red close button in the top right corner. It has three tabs: "Functions", "Timer" (which is selected), and "Miscellaneous". Inside the "Timer" tab, there is instructional text: "You can define the name and timer program for each timer (max. 3). Timer output/actuator shows the connected devices. For further information click 'Help'." Below this text is a table with four columns: "Name:", "Time:", "Timer output/actuator:", and "Activate cyclically sending". There are three rows of input fields. The first row has "clock 1" in the Name field, a "timer programme..." button in the Time field, a dropdown menu showing "Light" in the Timer output/actuator field, and an unchecked checkbox in the Activate cyclically sending field. The second row has "clock 2" in the Name field, a "timer programme..." button in the Time field, a dropdown menu showing "Heating" in the Timer output/actuator field, and an unchecked checkbox in the Activate cyclically sending field. The third row has "clock 3" in the Name field, a "timer programme..." button in the Time field, a dropdown menu showing "....." in the Timer output/actuator field, and an unchecked checkbox in the Activate cyclically sending field. At the bottom of the window are four buttons: "OK", "Abbrechen", "Übernehmen", and "Hilfe".

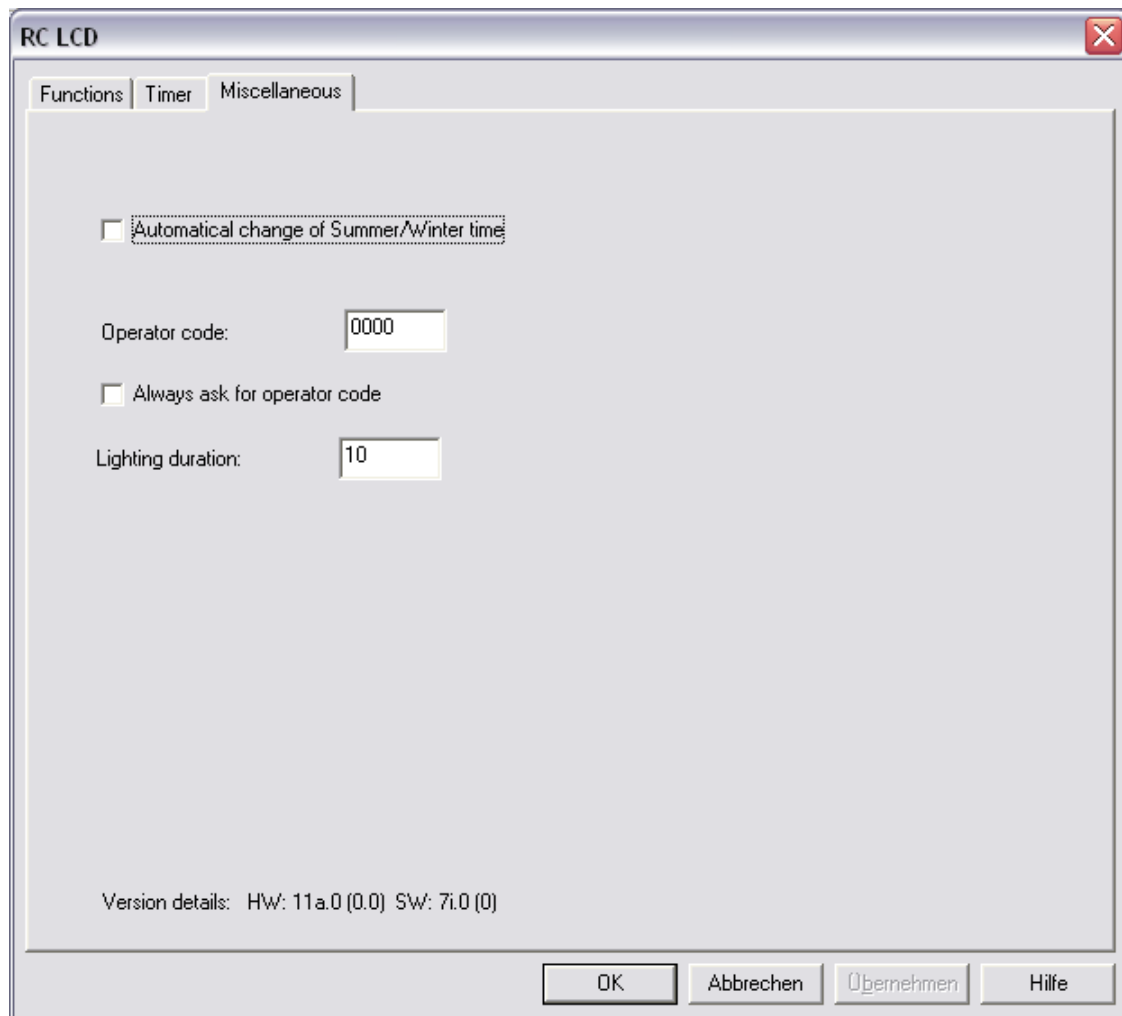
Name:	Time:	Timer output/actuator:	Activate cyclically sending
clock 1	timer programme...	Light	<input type="checkbox"/>
clock 2	timer programme...	Heating	<input type="checkbox"/>
clock 3	timer programme...	<input type="checkbox"/>

If the option "Activate cyclical sending" is active, the status of the timer will be sent to the assigned output every hour on the hour.

Also refer to chapter [General Information on the Remote Control with Display](#)

Remote Control with Display - Miscellaneous:

The page "Miscellaneous" is used for the settings of various general values for the Remote Control with Display.



The following settings can be done:

-) automatic changing of the clocks from summer time to winter time and vice versa
-) the operator's code and whether it should be requested every time
-) the time the display should stay active – in seconds

In addition, it also displays the hard and software version of the remote control.

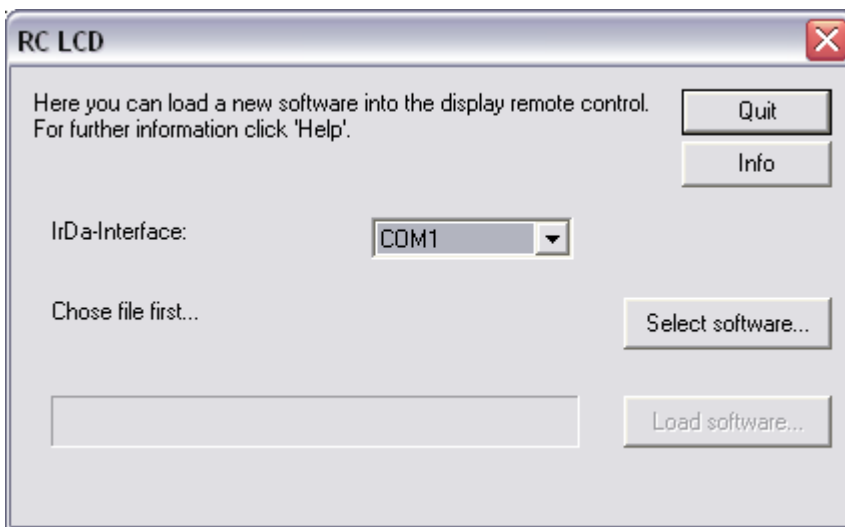
Also refer to chapter [General Information on the Remote Control with Display](#)

Remote Control with Display - Software update:

In order to carry out a software update on your remote control, please proceed as follows:

1. Via RF, read in the remote control into which you want to load the new software,
2. Make sure your infrared interface at the PC/Laptop has been activated
3. Activate the infrared interface of the Remote Control via "General Information" -> "Software update", you have only 2 minutes time to set up a connection
4. Establish a line of sight between the infrared interface of your PC and the infrared interface of the remote control (at the rear under the battery cover).
5. Under the Windows Start menu -> Settings -> System control -> Phone and modem options -> Tab: Modems you will see the remote control displayed as "Standard Modem over IR Link".
6. Under "Assigned to" you can see which COM interface has been assigned to the remote control.
7. Right-click the remote control in MRF and select the item "Load new software"

8. You will see this window appear:



9. Select the new software you wish to load (*.fb)
10. Select the COM interface that has been assigned to the remote control
11. Click "Load software"

Once the software has been successfully loaded, you will see a confirmation. The remote control will automatically reboot.

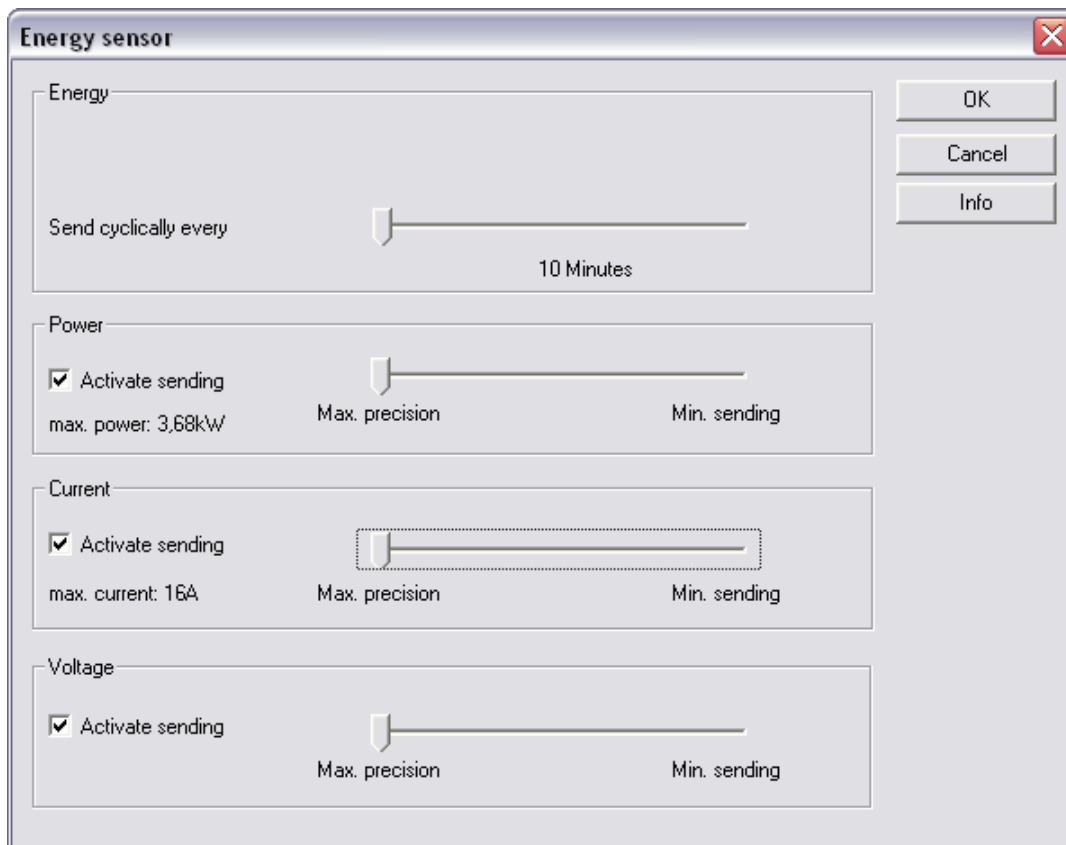
Also refer to chapter [General Information on the Remote Control with Display](#)

Energy measuring sensor



The Energy measuring sensor measures various consumption-related values (active power, voltage and current used at the moment, energy consumption value) and sends them to the Room Manager with Energy Function.

It features 4 channels (energy, active power, voltage, current) which send the values they measure independently from each other. The channel for energy is always active, for the other channels the sending of values can be activated or deactivated.



Energy:

The channel for energy is always active and the transmission of values cannot be deactivated.

Active power:

The transmission of this variable to be measured can be activated/deactivated and the accuracy of measuring can be adjusted.

Voltage:

The transmission of this variable to be measured can be activated/deactivated and the accuracy of measuring can be adjusted.

Current:

The transmission of this variable to be measured can be activated/deactivated and the accuracy of measuring can be adjusted.

As a general rule the cycle time for the transmission of values of all channels can be selected to be between 10 minutes and 1 hour.

Also refer to chapter [Room Manager with Energy Function – Input with Energy measuring Sensor](#)

Heating actuator



The heating actuator is used to control of specific electrical heating panels

Defined by what device is assigned to it in the MRF program it can be used in 3 different modes:

1. Operation without Room-Manager or Room controller
2. Operation with Room controller (Attention!! A special Room controller is needed!!)
3. Operation with Room-Manager

1. Operation without Room-Manager or Room controller:

In this mode the temperature measurement and set value preset is given by the radiator that is connected to the heating actuator.

The configuration window looks like:

Heating actuator

assigned device:

☒ Use actual temperature from the assigned device

☐ Use set value from the radiator

☒ Use set value from the assigned device

Comfort raising

3:00 hours

Operation mode

Toggle operation mode by:

Set value: 18 °C

Window contact

Window contacts:

Set value: 10 °C

Power recovery: Backup-Mode

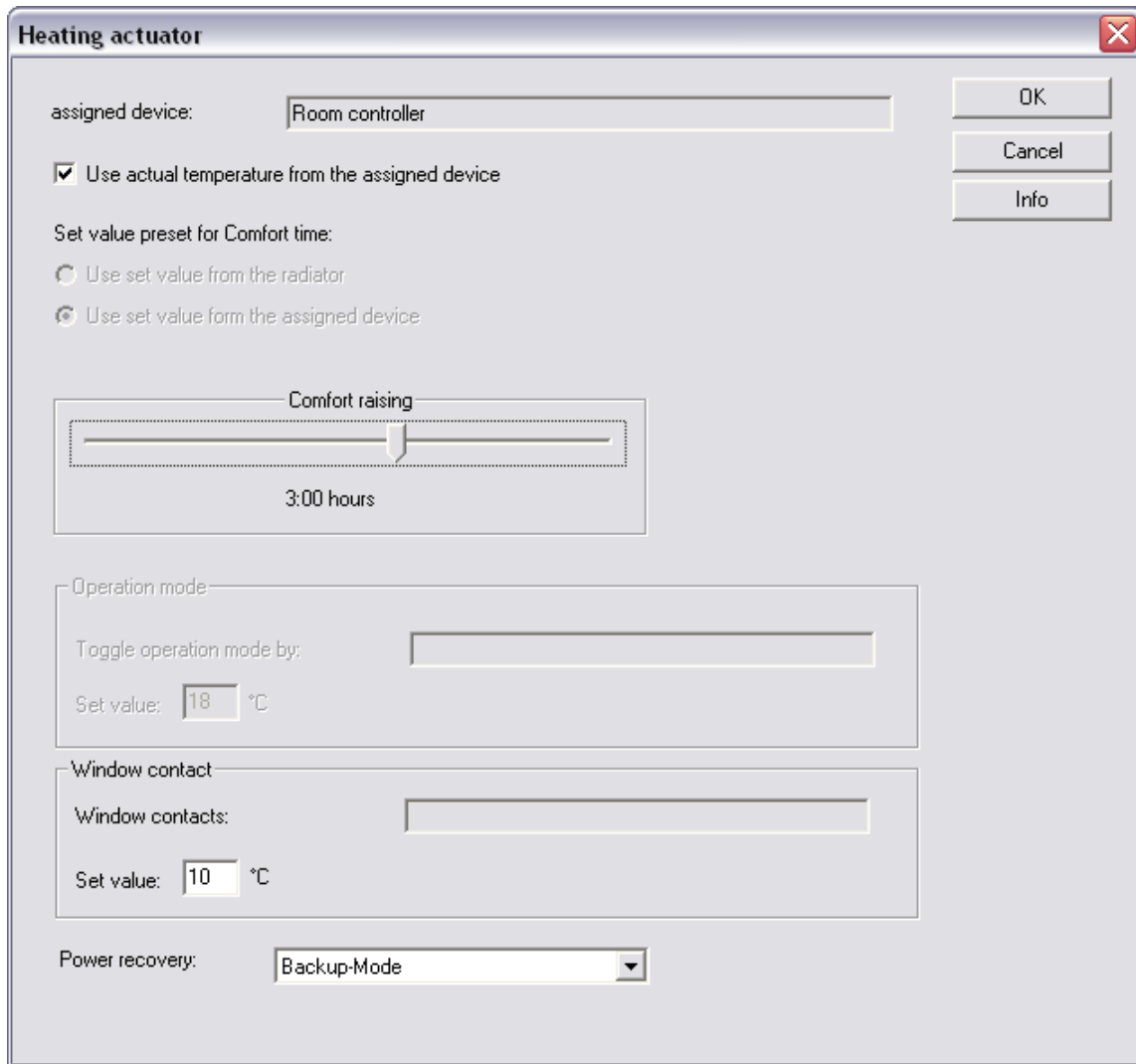
OK

Cancel

Info

The setting possibility for external temperature and set value preset is deactivated in this mode. But external sensor for operation mode switching has to be assigned. Its also possible to assign window contacts to the heating actuator.

2. Operation with Room controller:



The image shows a software window titled "Heating actuator" with a standard Windows-style title bar (minimize, maximize, close buttons). The window contains several configuration sections:

- assigned device:** A text box containing "Room controller".
- Buttons:** "OK", "Cancel", and "Info" buttons are located on the right side.
- Temperature Source:** A checked checkbox "Use actual temperature from the assigned device". Below it, "Set value preset for Comfort time:" is followed by two radio buttons: "Use set value from the radiator" (unselected) and "Use set value from the assigned device" (selected).
- Comfort raising:** A slider control with a label "Comfort raising" above it and "3:00 hours" below it. The slider is positioned at approximately 30% of its range.
- Operation mode:** A section containing "Toggle operation mode by:" followed by an empty text box, and "Set value:" followed by a text box containing "18" and a "°C" label.
- Window contact:** A section containing "Window contacts:" followed by an empty text box, and "Set value:" followed by a text box containing "10" and a "°C" label.
- Power recovery:** A dropdown menu showing "Backup-Mode".

In this mode the operation mode is controlled by the Room controller (via the switch). It can be defined if the actual temperature and the set value preset is given by the Room controller or the radiator.

After assigned to the heating actuator you can set the temperature values for the 2 operation modes in the Room-controller (comfort – standard 21°C, Eco – standard 17.5°C).

The screenshot shows a software window titled "Room controller" with a standard Windows-style title bar (minimize, maximize, close buttons). The window contains the following controls:

- Two radio buttons at the top left: "Send Switching command" (unselected) and "Send Temperature Value" (selected).
- Two temperature input fields: "Set value Comfort: 21 °C" and "Set value ECO: 17.5 °C".
- A horizontal slider below the temperature fields, ranging from "Most exactly Measurement" on the left to "Maximum Battery durability" on the right. The slider is positioned towards the left.
- A checked checkbox labeled "Send cyclically every" followed by a horizontal slider set to "1:00 hours".
- An "Offset temperature:" input field at the bottom left, showing the value "0 °C".
- Three buttons on the right side: "OK", "Cancel", and "Info".

3. Operation with Room-Manager:

The heating actuator is assigned as the heating request for a room of the Room-Manager (minimum firmware version is 6.35).

The control of the operation mode is done by the Room-Manager (timer program or manual). It can be defined if the actual temperature and set value preset is given by the Room-Manager or the radiator.

In this mode window contacts must only be assigned to the room of the Room-Manager and not to the heating actuator separately.

You can also set how the heating actuator will react after a power failure.

'Backup mode' – As long as no new control commands or temperature commands are received by its assigned devices all control commands will come from the connected radiator.

'old value' – It does exactly the same than before power failure until new commands and temperature are received

BOS/COS Interface



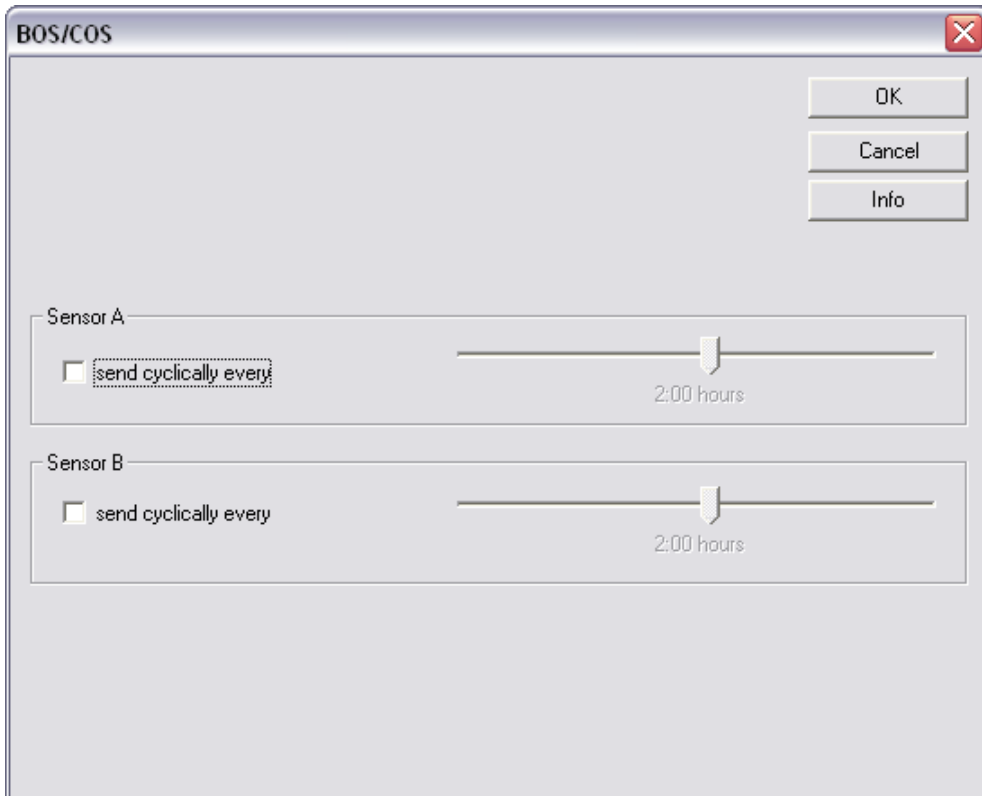
The BOS/COS interface has the purpose to integrate occupancy sensors such as bed- or chair-occupancy sensors in the Eaton RF System especially for the Elderly care function.

The device is mains supplied and contains 2 RJ11 jacks to which the sensors can be

connected.

If a sensor is occupied the device will send the command <SWITCHED ON>, if its not occupied it will send the command <SWITCHED OFF>;

Configuration window:



Similar to a binary input in Mode 2 you can activate/deactivate cyclic sending for each channel and set the cyclic time between 10 minutes and 18 hours.

Pendant remote control



The pendant remote control is a single channel remote control with the purpose of alarming in case of emergency. It sends the same RF commands as a binary input in Mode 1 (<ON (Einzeltaste)>, <UP Press>, <UP RELEASE>)

Different to normal sensors the device will repeat a command more often if it will not be acknowledged. So it has an improved transmission guarantee. Between the repeat of a command lies a pause of 5 seconds.

The device is battery supplied can be assigned to every other xComfort device. (With the exception of other sensors)

A LED on the upper left side of the device will indicate the actual state of the remote control. When the key is pressed the LED will light until the command will be acknowledged by the receiver, blink 2 times and then deactivates.

If the command will not be acknowledged although it has already been repeated the LED will blink 5 seconds to indicate the failure.

Overview MEP device



The MEP device is connected to an Eaton Smart Meter and transfers different values (total power, total energy, present rate, rate 1, rate 2, rate 3, rate 4) to a Room-Manager, Home-Manager or communication interface. It contains also 4 rate outputs and 10 general outputs which can be assigned to actuators.

The MEP device must be connected with an Eaton Smart Meter therewith you can scan and configure it with the MRF software.

Connection:

After the successful configuration and the activation of the option "The MEP device has been configured and can now used" a connection to another device can be drawn.

Following connection possibilities are maximal available:

Tariff output 1
Tariff output 2
Tariff output 3
Tariff output 4
Total
Tariff 1
Tariff 2
Tariff 3
Tariff 4
General output 1
General output 2
General output 3
General output 4
General output 5
General output 6
General output 7
General output 8
General output 9
General output 10
Cancel

Tariff outputs or general outputs can be assigned to one or more actuators, Room-Manager inputs, Home-Manager data points and communication interface data points.

The total energy value and the rate 1-4 channels can be assigned to Room-Manager inputs, Home-Manager data points and communication interface data points.

Info to the different settings:

- see [MEP device - Total Energy](#)
- see [MEP device - Tariff Energy](#)
- see [MEP device - Tariff outputs](#)
- see [MEP device - General outputs](#)
- see [MEP device - General](#)
- see [Room-Manager Energy - Input MEP](#)

MEP device - Total Energy:

On this page you can configure the total energy channel of the MEP device and which values will be transferred.

The screenshot shows a configuration window titled 'MEP device - Total Energy'. It has five tabs: 'Total-Energy' (selected), 'Tariff Energy', 'Tariff outputs', 'General outputs', and 'General'. The 'Total-Energy' tab contains three sections:

- Energy value:** Includes a checked 'Active' checkbox and a slider for 'send cyclically every' set to '30 Minutes'.
- Power value:** Includes a checked 'Active' checkbox and a slider between 'Max. precision' and 'Min. sending'.
- Tariff-Info:** Includes a checked 'Active' checkbox and a slider for 'send cyclically every' set to '30 Minutes'.

At the bottom of the window are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.

Energy value: Transmission of the energy value activated/deactivated and definition of the cyclical time

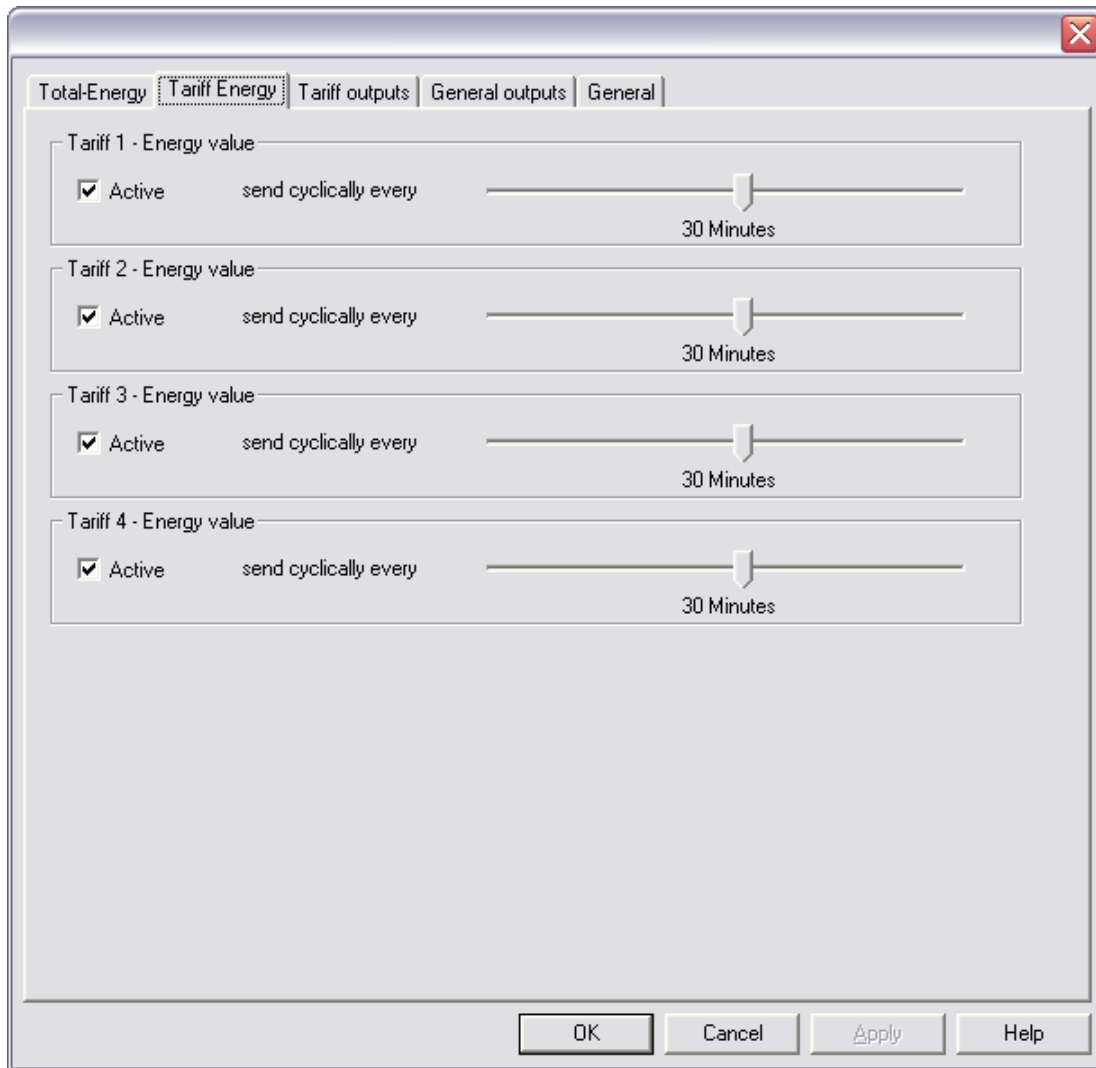
Power value: Transmission of the power value activated/deactivated and definition of the cyclical time

Tariff info: Transmission of the rate info activated/deactivated and definition of the cyclical time

see [Overview MEP device](#)

MEP device - Tariff Energy:

On this page you can configure the rate energy channel 1-4 of the MEP device.



Rate 1 Energy value: Transmission of the rate 1 Energy value activated/deactivated and definition of the cyclical time

Rate 2 Energy value: Transmission of the rate 1 Energy value activated/deactivated and definition of the cyclical time

Rate 3 Energy value: Transmission of the rate 1 Energy value activated/deactivated and definition of the cyclical time

Rate 4 Energy value: Transmission of the rate 1 Energy value activated/deactivated and definition of the cyclical time

see [Overview MEP device](#)

MEP device - Tariff outputs:

On this page you can configure the tariff output channels 1-4 of the MEP device.

	Tariff output 1:	Tariff output 2:	Tariff output 3:	Tariff output 4:
Tariff 1:	On	On	On	On
Tariff 2:	Off	On	On	On
Tariff 3:	Off	Off	On	On
Tariff 4:	Off	Off	Off	On

Configuration and cyclical transmission (every hour) of the status of each rate output. (only if the rate is active).

see [Overview MEP device](#)

MEP device - General outputs:

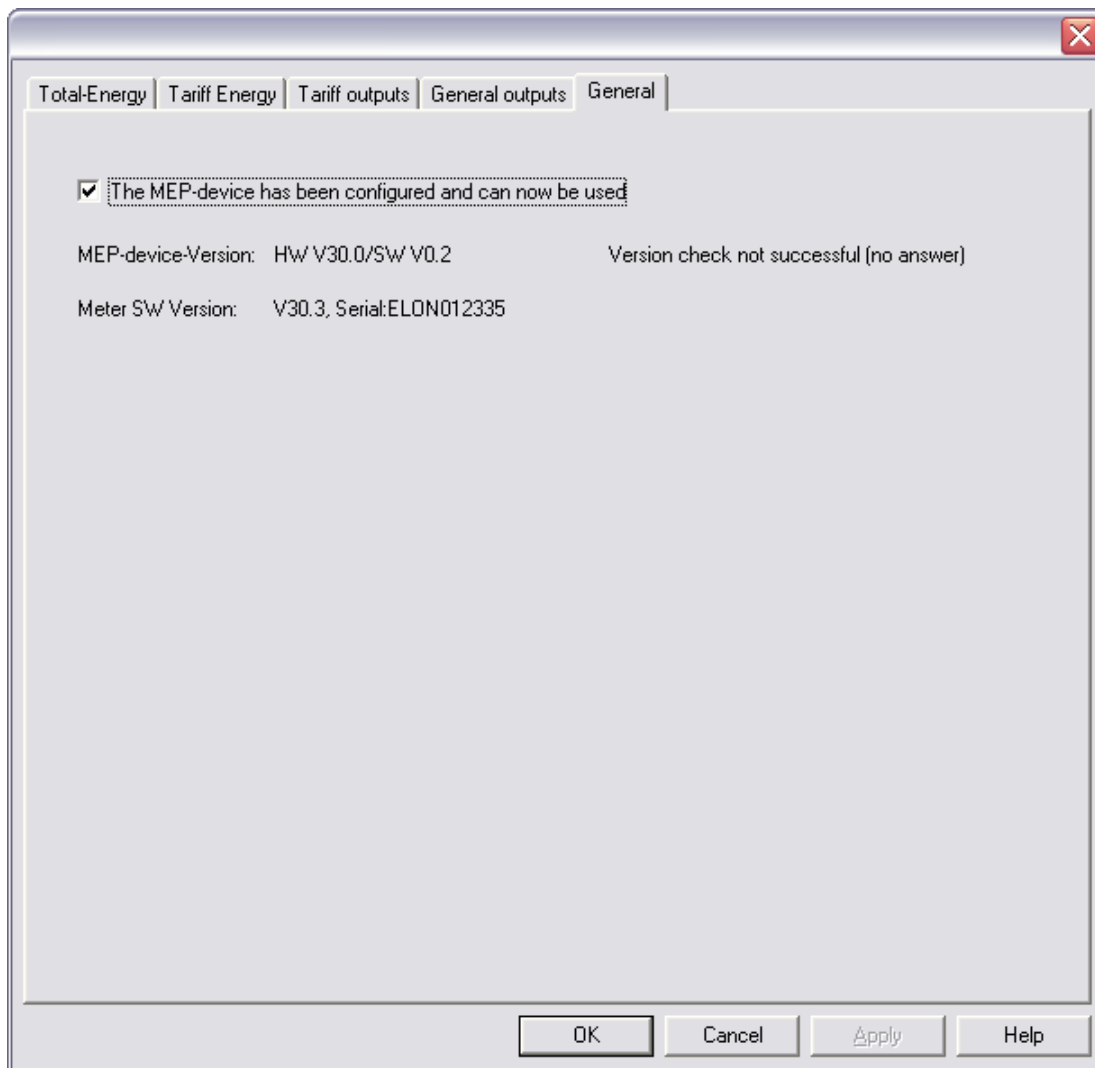
This page displays the connected devices to the 10 different General outputs of the xC MEP device..

The screenshot shows a configuration window for the Eaton RF-System. The window has a title bar with a close button (X). Below the title bar is a tabbed interface with five tabs: 'Total-Energy', 'Tariff Energy', 'Tariff outputs', 'General outputs' (which is selected and highlighted with a dashed border), and 'General'. The main area of the window is divided into two columns. The left column is labeled 'Name:' and contains ten entries: 'General output 1:', 'General output 2:', 'General output 3:', 'General output 4:', 'General output 5:', 'General output 6:', 'General output 7:', 'General output 8:', 'General output 9:', and 'General output 10:'. The right column is labeled 'Output/actuator:' and contains ten empty text input fields, each corresponding to one of the entries in the left column. At the bottom of the window, there are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.

see [Overview MEP device](#)

MEP device - General:

On this page general information is displayed and the enabling of the MEP device can be done.



After the successful configuration and the activation of the option "The MEP device has been configured and can now be used" a connection to another device can be drawn.

MEP device version: Shows hardware and software version of the MEP device

Meter SW version: Shows the version and serial number of the connected Smart Meter

Further the results of the version verify is displayed. The version verify shows if the software version of the MEP device is equal to the scanned version in the MRF project.

see [Overview MEP device](#)

RF Radiator thermostat:



The RF Radiator thermostat serves the purpose of controlling a radiator. Depending on the mode it is configured by the MRF it can be used in 2 different ways.

1. Stand-alone Operation

In this mode the RF Radiator thermostat is not connected to a central device and will do everything on its own. Set temperature and weekly time programs will be set directly on the device. The configuration can be done by the MRF but also on the device itself using the menu.

- Assigned device:** In the stand alone operation there is no assigned device. Furthermore the function „send own temperature to intelligent device“ is not used.
- Request/Regulation time:** You can set the time that the device will compare the actual- and set-temperature and if necessary does an adaption of the valve position with this slider.
- Offset of the measured temperature:** You can set an offset temperature for the internal temperature sensor of the device. That is necessary because eventually the temperature measured near the radiator can be different than the temperature in other areas of the room. So you can make sure that the thermostat will regulate to the right temperature in the room and not just the temperature near the radiator.
- Frost protection:** You can set the temperature that is used for frost protection (7°C per default).
The frost protection is active if the actual temperature falls below this temperature. This is independent of other modes of the device and will always work.
- Open window detection:** If this function is activated the device will detect a temperature drop in the room and switch off the radiator.

Using the slider you can change the sensibility (temperature drop within

a time) of the detection.

Further the time for the heating break can be defined. After this break the thermostat will continue with the regulation based on its set- and actual-temperature.

Set value day:	Here you can define the set value for the day or comfort temperature
Set value night:	Here you can define the set value for the night or Standby temperature
Timer programme:	In the timer programme you can define 3 different time areas for every day. Within this time areas the thermostat will regulate to the day temperature and outside of this time areas the thermostat will regulate to the night temperature. Using the Copy-function you can copy the times of a day to another.
Autonomous – manual – Set value:	Here you can define the Set value for the manual mode (it has no influence on the weekly program)
Automatic change of summer-/winter-time	If this function is activated the device will automatically switch to summer or winter time on the respective dates.

2. Operation with an intelligent device (Room-Manager, Home-Manager...)

In this mode the regulation of the radiator will be controlled by the intelligent device. Set-temperatures and weekly programs will be defined in the intelligent device. The RF radiator thermostat is working like an actuator that controls the radiator depending on the set- and actual-temperature that it receives from the intelligent device.

Assigned device: The name of the connected intelligent device will be displayed here

You should activate the function „send own temperature to intelligent device“ if you want to use the Radiator thermostat as a Room temperature sensor in the connected intelligent device. If you have a connection to a Room-Manager you can choose to set one of the connected radiator thermostats as Room temperature sensor in the settings window for the Room. If the room temperature is already measured by another sensor (Room controller or temperature input) this function should not be activated.

Request/Regulation time: You can set the time that the device will communicate with the intelligent device in order to get a new Set- and actual temperature. If new data has been received the valve position will be recalculated based on these values.

Offset of the measured temperature: You can set an offset temperature for the internal temperature sensor of the device. That is necessary because eventually the temperature measured near the radiator can be different than the temperature in other areas of the room. So you can make sure that the thermostat will regulate to the right temperature in the room and not just the temperature near the radiator.

Frost protection: You can set the temperature that is used for frost protection (7°C per default). The frost protection is active if the actual temperature falls below this

temperature. This also works if the operation mode of the intelligent device is switched to OFF.

Open window
detection:

If this function is activated the device will detect a temperature drop in the room and switch off the radiator.

Using the slider you can change the sensibility (temperature drop within a time) of the detection.

Further the time for the heating break can be defined. After this break the thermostat will request new values from the intelligent device and continue with the regulation based on its set- and actual-temperature.

Overview Ethernet CI:



The ECI is a central device that serves the purpose of a connection between the wireless xComfort system and the Ethernet Standard. The different types are 'LAN with external Power supply' and 'LAN with PoE (Power over Ethernet)'. In the future an additional WLAN type will be available.

The main use of this device will be:

- Control and connect xComfort RF devices using LAN
- Routing of connections between xComfort RF devices over Ethernet (min. 2 ECI are necessary)

Control and connect xComfort RF devices over Ethernet:

Similar to the USB-CI the ECI can be connected to any xComfort RF device using its 99 datapoints. Control of the connected devices can be done by a 3rd party application that has access to the ECI over Ethernet.

Routing of connections between xComfort RF devices over Ethernet:

If there are at least 2 ECI in the project it is possible that connections between xComfort devices are routed over Ethernet. Basically that is defined automatically when connections are calculated by the MRF using the different reception quality information and the Ethernet Routing rules. The difference to a normal RF routing is only that one partial path can be routed over Ethernet instead of RF. The option of Ethernet-Routing can be activated/deactivated separately for every ECI. Additionally if there is a project topology defined one or more ECI can be defined as Ethernet-communication node for a Topology-area. xComfort devices of different Topology-areas can only communicate over their nodes with each other. This gives the advantage of having control over the exact way that devices will communicate.

General Configuration:

A maximum of 255 ECI can be used in a single MRF project. Every ECI can have up to 255 Routing paths (of which 13 can be RF Routing paths) and 99 direct connections using its datapoints. After the device has been scanned the device is shown with its device symbol and default name (Ethernet CI). Depending on its configuration the device symbol can look different.



Ethernet Routing activated, not used as Ethernet-Communication node



Ethernet Routing deactivated, not used as Ethernet-Communication node



Ethernet Routing activated, used as Ethernet-Communication node

To change the settings of the Ethernet Routing go to the [Network settings](#) of the ECI and activate/deactivate the option „Allow Ethernet Routing“. An ECI can only be used as an Ethernet communication node if the Ethernet Routing is basically allowed. Ethernet Routing can only be deactivated if the ECI is not used as Ethernet communication node. To set the ECI as Ethernet communication node you have to right click the Topology-area of this ECI and check it as Ethernet Communication node in the Popup-Menu of the Topology-View.



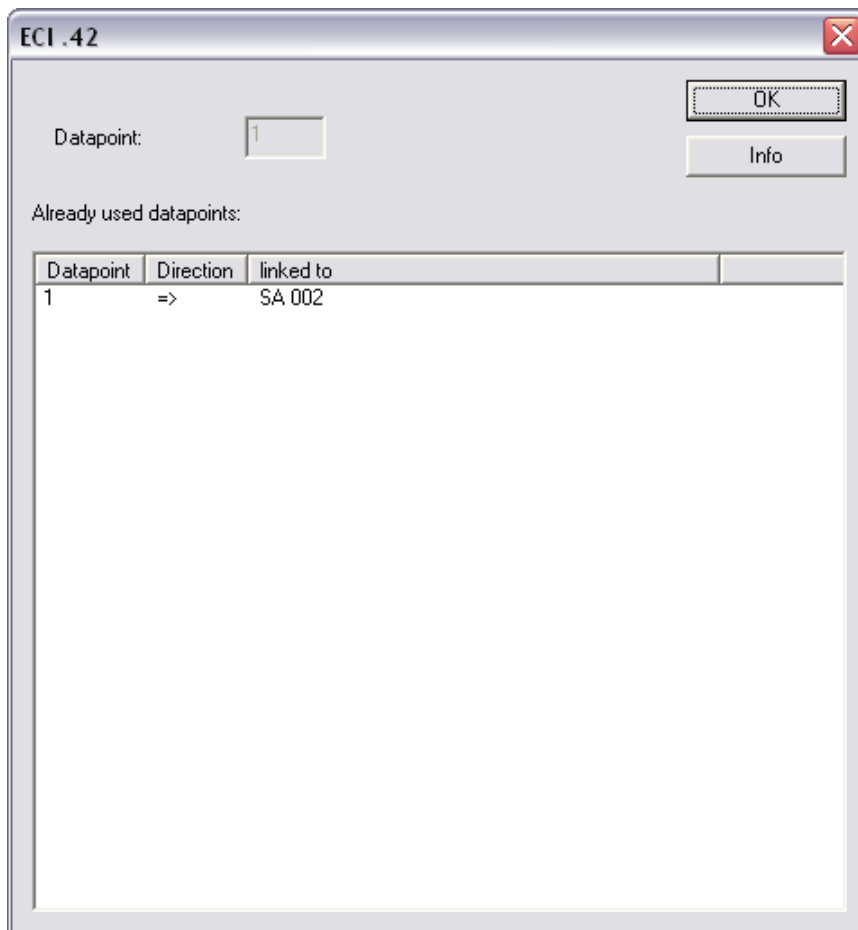
There can be more than one ECI as Ethernet communication node of a Topology-area. When calculating connections the best possible Communication node will be chosen.

Every ECI in the project needs to have a unique IP-address. For the Ethernet Routing it is important that all devices are loaded and that there are no ECI with the same IP address in the project. In the MRF options you have the possibility to choose if the ECI's use the IPv4 or the IPv6 address for the Ethernet Routing. Depending on this setting either the IPv4 or IPv6 address of the ECI needs to be defined in the network settings.

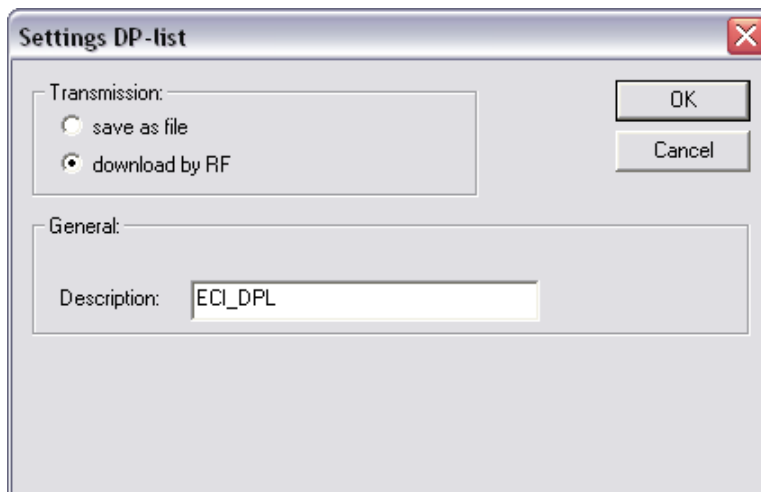
Every ECI has its own webserver that you can reach by entering the ECI's IP address in your browser (LAN connection must be available). The default Login name and password are both "admin". The default IPv4 address of a new ECI is "192.168.42.30" and the Ipv6 address "fd88:8d0d:632a:d855:0000:0000:0000:0030/64". The webserver can be used to change network settings, do software updates and change various other settings.

Direct connection to an ECI:

A direct connection of an xComfort RF device to the ECI is working similar to a connection to a Home-Manager or an USB-CI. Already existing connections can be seen by "Popup-Menu -> Settings".



After all connections have been drawn a datapoint list needs to be created. New is the possibility to either save the datapoint list as file or to download it directly to the device by RF. In both cases a new datapoint list format will be used for the ECI.



At „Description“ a name for the datapoint list can be entered (max. 11 characters). When selecting “download by RF” the datapoint list will be downloaded to the memory of the ECI where it can be used by other applications. The direct download is only optional and not necessary at all times. A 3rd Party application could be used to read the list over Ethernet. The new datapoint list format has some additional information about the Topology areas indices of all connected devices and all Topology area names.

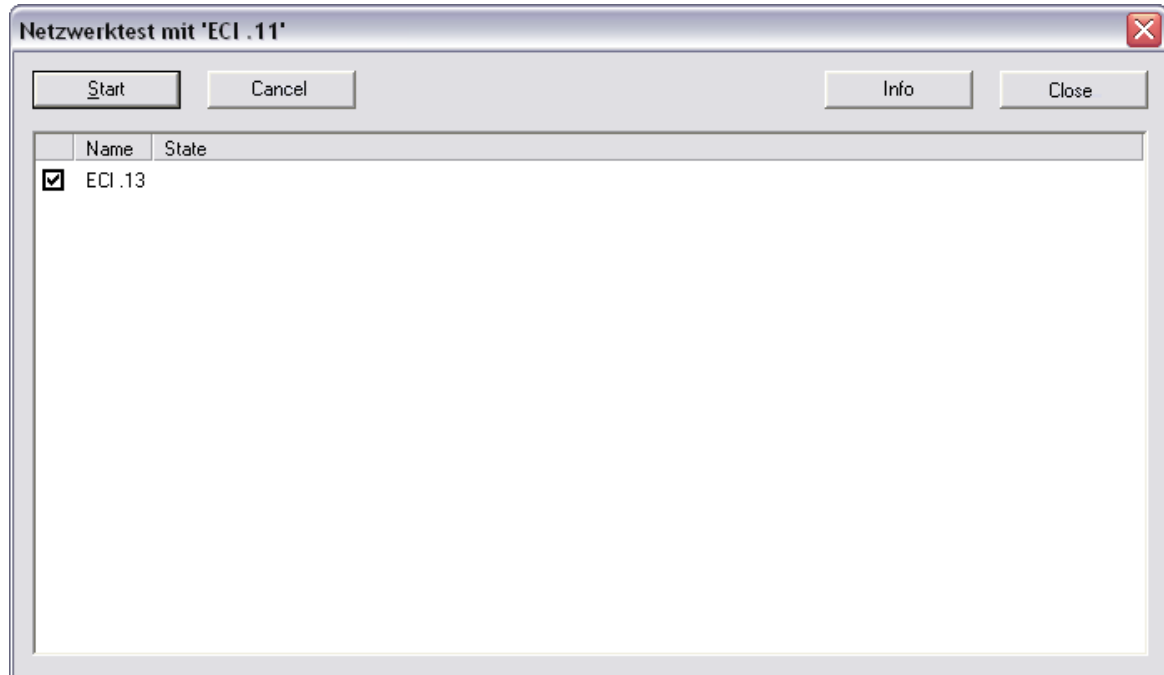
Further Help topics for the Ethernet CI:

Help [Network test](#)
Help [Network settings](#)

Network test:

The network test can be used to check the LAN connection of all ECI's in the project. All ECI's need to be fully configured and loaded completely and there must not be any double or invalid IP-addresses. The test can be executed by using „Device Popup menu -> Network test“ of any ECI in the project.

The ECI for that you execute this test needs to be in the RF reception area of the RF-Gateway.



Checking the mark for all existing entries you can choose to which other ECI's you want to make the network test. Clicking START will trigger a ping request from this ECI to all selected. While the test is running the state of the respective ECI will be "pinging...". The result will also be displayed in the "State" column next to the name.

The network test can produce the following results::

- Canceled! – There was no answer from this ECI and the test has timed out
- Good connection – The connection to this ECI is good
- Sufficient connection – The connection to this ECI is not perfect but still OK
- Bad connection – The connection to this ECI is bad
- Not reachable – This ECI could not be reached

See also [Overview Ethernet CI](#)

Network settings of the Ethernet CI:

Here you can find information about the possibilities for the ECI network settings. The network settings can be reached by „Device Popup menu -> Network settings“.

Ethernet CI - Network Settings

IP-settings:

IPv4:

Address: 192.168.42.42

Subnet mask: 255.255.255.0

Gateway: 192.168.42.1

IPv6:

Address: fd88:8d0d:632a:d855:0000:0000:0000:0030

Net Prefix length: 64

Ethernet-Routing

☒ Allow Ethernet-Routing

Device information:

MAC-address: 00-40-9d-3f-24-64

HW-Version: Var: 0; V1: 0; V2: 3 - ECI with ext. Power supply

SW-Version DIGI: 0.15

SW-Version RF: 0.153

OK

Cancel

Info

IP-settings:

IPv4:

Address - IPv4 Address of the ECI in the format "x.y.y.y" (x: 1-255, y: 0-255)
 Subnet mask – Subnet mask in the same format like the IP address
 Gateway – Address of the Gateways or the Router

IPv6:

Address - IPv6 Address of the ECI in the Format "xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx"
 (x...Hexadecimal-number 0-9,A-F)
 Net-Prefix-Length – Length of the Ipv6 Net prefix

Ethernet-Routing:

Allow Ethernet Routing – If this option is activated the ECI can be used as Ethernet Router and will be considered when calculating connections

Device-Information:

MAC-Address – Shows the [MAC-Address](#) of the network part of the ECI

HW-Version – Shows the Hardware version of the ECI with Variant, Version 1 and Version 2.

SW-Version DIGI – Shows the Software Version of the DIGI Part of the CI

SW-Version RF - Shows the Software Version of the RF Part of the CI

Please make sure that every ECI in the project has a unique IP-address or it will not work correctly.

Also see [Overview Ethernet CI](#)

Multi-Heating actuator



The Multi-Heating actuator is a mains supplied device that can be used to control electrical valves for Panel heating- and cooling-systems (Floor heating,...). Up to 12 different zones and a maximum of 14 vales can be controlled by the device.

It has 12 inputs for Set- and Actual temperature, a sum output, an error output, a binary input for a dew point sensor and an input for Heating/Cooling toggle.

The temperature information for the each of the 12 inputs can either be sent by a Room-controller (Type CRCA-00/06 or CRCA-00/07), a Room-Manager, a Home-Manager or other intelligent devices like Ethernet CI, USB-RF-Communication-Stick etc.

In the configuration window of the Multi-Heating actuator (right click on the device symbol and selection of „configuration“) you can find information about the connected devices for each channel and the Software- and Hardware-Version of the device.

Detailed information about the connection of the electrical valves and the different wiring possibilities can be found in the mounting instruction.

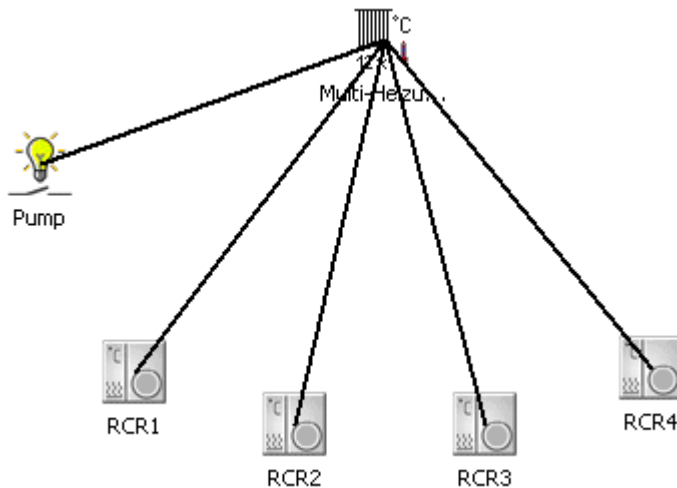
General information about the different channels of the Multi-Heating actuator:

Heating inputs 1-12	Inputs for Set- and Actual-temperature from Room-controllers, Room-Manager etc.
Sum output:	Output that can be connected to any actuator (for controlling a pump etc.). Its state depends on the state of each of the 12 valve outputs.
Error output:	Output that can be connected to any actuator. It will be ON if any error occurs (no temperature information, low battery of connected sensors etc.)
Input: dew sensor	Input for a binary dew point sensor. If it receives an ON message cooling is not allowed.
Input: Heating/Cooling toggle	Input for the toggle of the operation type between Heating and Cooling (OFF=Heating, ON=Cooling)

Operation with Room-controller:

In this case one or more Room-controller (Type CRCA-00/06 or CRCA-00/07) are used to provide the Room- and Set-temperature. Each Room-controller can be connected to multiple inputs of the Multi-Heating actuator but each input can only have one connection. The Room-controller needs to be set to the Mode „Send temperature value“.

The values of the Set-temperatures for Comfort and Eco mode can be set in the configuration window of the Room-controller. Using the Mode-switch on the Room-controller you can toggle between comfort and Eco mode. Additionally the set value can also be changed by the customer between +3°C and -3°C using the control wheel.



In this configuration the Multi-Heating actuator works in the operation type Heating only therefore we recommend plugging the jumpers on the Multi-Heating actuator for each channel to „Heating only“. That will make sure that these channels will never be controlled when operation type cooling is active.

Operation with Room-Manager:

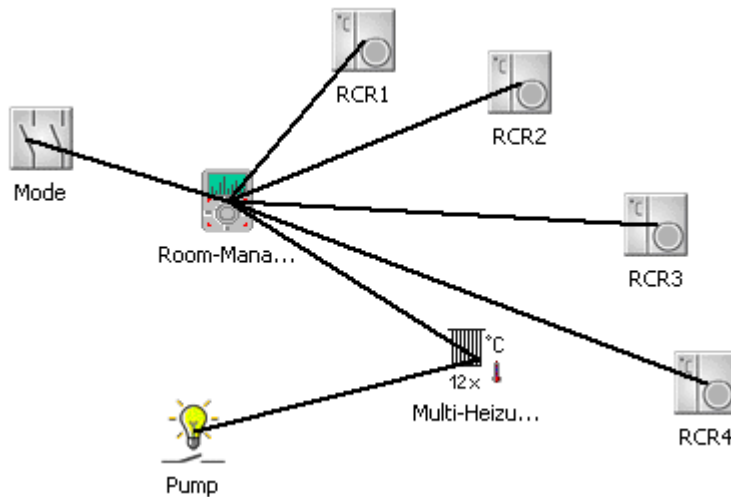
In this case every connected channel of the Multi-Heating actuator receives Set- and actual temperature from a Room of the Room-Manager. Each Room can be connected to multiple inputs of the Multi-Heating actuator but each input can only have one connection.

If an input of the Multi-Heating actuator is used for „Heating only“, „Cooling only“ or „Heating and Cooling“ can be defined when drawing the connection.

R1	▶	Heating-/Cooling request
R2	▶	Heating request
R3	▶	Cooling request
R4	▶	
Cancel		

Before connecting Rooms with inputs of the Multi-Heating actuator you have to make sure that the Room-Manager and Multi-Heating actuator always are in the same operation type. This is done by connecting the „Operation type output“ of the Room-Manager with the „Heating/Cooling“ input of the Multi-Heating actuator. .

The Set values and the timer programs for each room can later be configured in the Room-Manager configuration window.



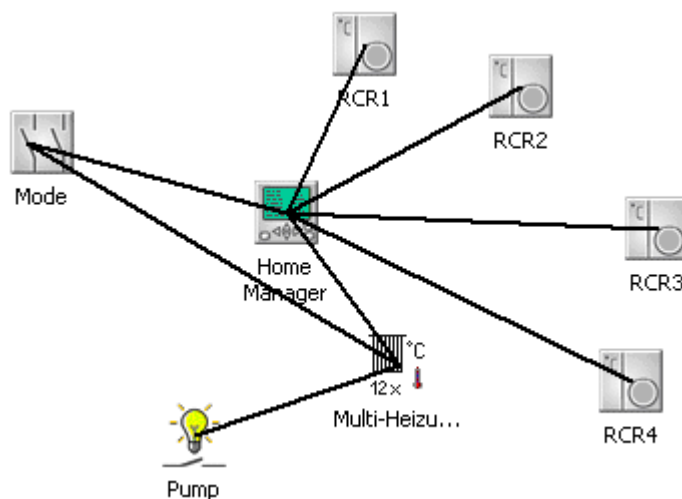
We recommend plugging the jumpers on the Multi-Heating actuator for each channel to „Heating only“, „Cooling only“ or „Heating and Cooling“ depending on how you use the channels in the Room-Manager. That will make sure that all channels are only controlled when their desired operation type is active.

See also [Heating and Cooling with the Room-Manager](#) – Connection to a Multi-Heating actuator

Operation with the Home-Manager and other intelligent devices:

In this case every connected channel of the Multi-Heating actuator receives Set- and actual temperature from its respective datapoint of a Home-Manager or other intelligent device. Each datapoint can be connected to multiple inputs of the Multi-Heating actuator but each input can only have one connection.

If an input of the Multi-Heating actuator is used for „Heating only“, „Cooling only“ or „Heating and Cooling“ needs to be defined in the Configuration program of the Home-Manager or the 3rd Party program for the intelligent device. Anyhow you need to make sure that the Multi-Heating actuator and the control program in the intelligent device work in the same operation type at all time. This is done by connecting a datapoint of the used device with the „Heating/Cooling“ input of the Multi-Heating actuator. Every time the control program toggles between heating and cooling the datapoint needs to send this information to the Multi-Heating actuator.



We recommend plugging the jumpers on the Multi-Heating actuator for each channel to „Heating only“, „Cooling only“ or „Heating and Cooling“ depending on how you use the channels in the Home-Manager or intelligent device. That will make sure that all channels are only controlled when their desired operation type is active.

Information about the valve regulation of the Multi-Heating actuator:

The electrical outputs of the Multi-Heating actuator are PWM controlled (Pulse width modulation). A PWM cycle lasts 15 minutes and the ON and OFF time is depending on the difference of Set- and actual-temperature. For example if there is a high difference the Output will be ON for about 11 minutes and OFF for 4 minutes. If there is a low difference it is the other way round. The maximum ON time for the output is 12 minutes and the minimum time is 1 minute (if it's lower than that it will not switch ON at all). For every new value of Set- and actual temperature the regulation will be recalculated.

The connected electrical valves have a specific inertance and will not close immediately when they are switched OFF.

USB-RF-Communication Stick



The USB-RF-Communication Stick is used to enable the Eaton wireless system to communicate with the PC, e.g. using display software or a different control system.

The connection to other systems will be done exclusively over USB.

The USB-RF-Communication Stick partially replaces the old Communication interface (CKOZ-00/03). The only difference is that the old interface can also communicate by RS232.

However it does not replace the configuration interface that is used by the MRF. The configuration of a project in the comfort mode is only possible using the Configuration interface (RS232 gateway or USB-RF-Configuration Stick).

Making connections:

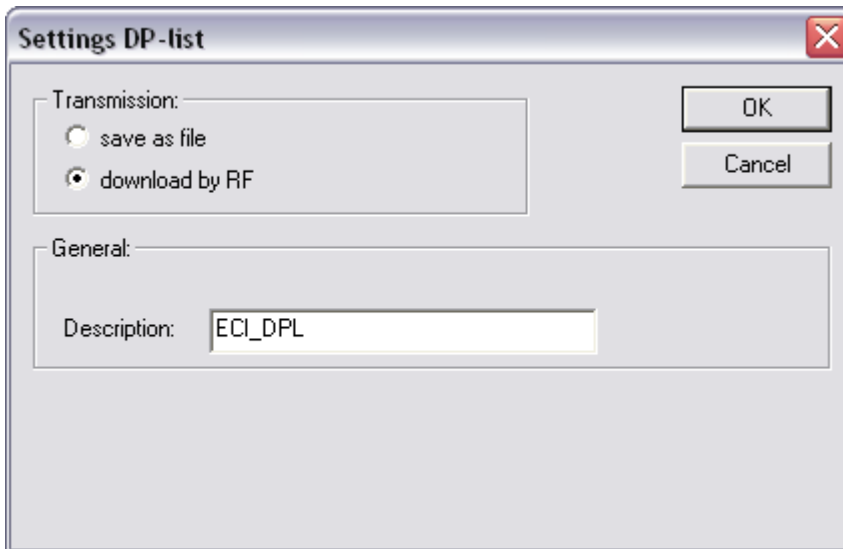
The connection to other xComfort devices is done using single datapoints.

If you draw a connection from a xComfort device to the USB-RF-Communication Stick the datapoint window will pop up. You can enter the desired datapoint number for the assigned device. If you connect multiple actuators to the same datapoint it will simply generate multiple entries for this datapoint.

Create datapoint list:

Using the Popup-menu of the USB-RF-Communication Stick you can select the function „Create datapoint list“ to create a list of all connected devices for all datapoints

You either have the option to save the list in a file or transfer it directly to the external memory of the device by RF.



Save as file: The possibility to save the list as a file in the TXT- or the extended DPL-format. The new DPL-format offers additional information about the Topology area of the connected devices as well as the area names.

Download by RF: The list will be downloaded in the extended format to the external memory of the USB-RF-Communication Stick for later use.

Details about the extended DPL-format can be found in the 3rd-party-documentaion.

Function of LEDs and Pushbutton:

The USB-RF-Communication Stick has 3 LED to indicate different states and one pushbutton..

Green LED: Active if the device is supplied. If a USB-Command is sent the LED will switch OFF briefly.

Red LED: Is normally inactive. When making connections in the basic mode the LED has the same functionality as a LED of an actuator. When the device is resetted using the pushbutton it will blink as described in the mounting instruction of the device.

Orange LED: Briefly active when a RF-command is sent or received

Pushbutton: With the pushbutton you can completely reset the device. The sequence is identical like deleting an actuator in basic mode.

Also see [Software Update of USB-RF-Sticks](#)

Smart Home Controller



The Smart Home Controller serves as a central control & communication unit. It can send commands to all actuators and receive commands from all sensors, which it then processes internally. It does not have an own display, therefore it needs for operation and visualization one of the following devices:

For configuration purpose:

Laptop, PC or Tablet PC with browser (Microsoft Internet Explorer, Mozilla Firefox, Google Chrome, Opera, etc)

For Visualization & Operation purpose:

Apple iPhone or iPad with iOS App (App Store)

Android Smartphone or Tablet with Android App (Google Play Store)

Smartphone or other web-enabled device with mobile JavaScript capable browser

The communication of these devices with the smart home controller is done via LAN or WLAN.

For further information about functionality, installation and configuration please refer to the xComfort catalogue, the mounting instruction and the online help function of the Smart Home Controller.

The communication to other xComfort components is done via the built-in RF module or over one or more Ethernet-CI.

Making connections:

The connection to other xComfort devices is done using single data points.

If you draw a connection from a xComfort device to the Smart Home Controller the data point window will pop up. You can enter the desired data point number for the assigned device. If you connect multiple actuators to the same data point it will simply generate multiple entries for this data point.

Create data point list:

Using the Popup-menu of the Smart Home Controller you can select the function "Create data point list" to create a list of all connected devices for all data points.

You either have the option to save the list to a file or transfer it directly to the memory of the device by RF.

Save as file: The possibility to save the list as a file in the TXT- or the extended DPL-format. The new DPL-format offers additional information about the Topology area of the connected devices as well as the area names.

Download by RF: The list will be downloaded in the extended format to the memory of the Smart Home Controller for later use.

Details about the extended DPL-format can be found in the 3rd-party-documentaion.

Function of LEDs and Pushbutton:

The Smart Home Controller has 5 LED to indicate different states and one pushbutton. For a more detailed description of the functionality



Power: Indicates intact power supply



Status of network connection & connection to Eaton Server



Status of RF connection



System messages or warnings



Battery status of connected battery supplied sensors



Configuration push button

Basic Mode:

Is currently not supported by the smart home controller software

Switching actuator 10A / 16A – New Generation



siehe auch:

[Switching actuator 10A/16A - Actuator function](#)

[Switching actuator 10A/16A - Binary input](#)

[Switching actuator 10A/16A - Energy measurement](#)

[Switching actuator 10A/16A - Extended Status message](#)

General information:

The Switching actuators 10A/16A are a new generation of actuators and the successors of the old Switching actuator CSAU-01/01. The main function is still to switch different electric loads and they can be controlled by any binary xComfort sensor. The possible switch functions of the 10A and 16A types are identical.

All switching actuators are similar in their basic functionality however the different types vary in maximum load and additional functionality.

Functionality overview compared with the old switching actuator:

Variant	Symbol	Type designation	Type name	max. Load	Binary input	Energy function
Alt		CSAU-01/01	Switching actuator old	8A (R,L) @ -5 - +45°C	-	-
0		CSAU-01/01-10	Switching actuator old 10A	10A (R, L, C) @ -5 - +45°C	-	-
1		CSAU-01/01-10I	Switching actuator old 10A with Binary input	10A (R, L, C) @ -5 - +45°C	●	-
3		CSAU-01/01-10IE	Switching actuator old 10A with Binary input and Energy function	10A (R, L, C) @ -5 - +45°C	●	●
4		CSAU-01/01-16	Switching actuator old 16A	16A (R, L, C) @ -5 - +35°C	-	-
5		CSAU-01/01-16I	Switching actuator old 16A with Binary input	16A (R, L, C) @ -5 - +35°C	●	-
7		CSAU-01/01-16IE	Switching actuator old 16A with Binary input and Energy function	16A (R, L, C) @ -5 - +35°C	●	●

Types with the binary input add the additional functionality like one channel of the 230VAC Binary input. The state of a mains powered switch or pushbutton is detected and depending on the configuration used internally in the own actuator function and/or connected to other xComfort devices.

Types with the Energy measurement function will additionally measure the active power and record the Energy of the connected Load. These channels can be connected directly to an intelligent device to monitor and manage the measured power and energy. The additional Load Error Detection status can be used to signal a failure of the switched load based on a load beneath the

definable minimum consuming power.

Each function (actuator, Binary input, Energy measurement) has its own configuration page in the configuration window of the switching actuator. Additionally a general page will provide general device information.

Channel overview:

The RF-channels of the new actuator are depending on the type (see function overview above). However all types have at least one input channel for up to 32 different sensors and the output channel of the new [extended status message](#).

Type	Nr.	Name	Command/Value	possible connection
Input	0	Actuator input	Commands of all binary sensors	Connection of max. 32 binary sensor channels
Output	0	Status	extended Status message	Connection will be automatically drawn as a back channel if a new intelligent device is connected to the actuator input channel. See extended status message
Output	1	Output Binary input	M1: ON, ON pressed, ON released; M2: ON, OFF;	all actuator inputs, Inputs Router, inputs of intelligent devices,
Output	2	Energy	Energy value in X,XXXkWh	Room-Manager Energy input, all inputs of intelligent devices, Inputs Router
Output	3	Power	active power in X.XW	Room-Manager Energy input, all inputs of intelligent devices, Inputs Router
Output	4	Load error	YES=ON, NO=OFF	all actuator inputs, Inputs Router, inputs of intelligent devices

Connection to other devices:

Using the [connection mode](#) connections to other device can be drawn. When drawing a connection depending on the type of the connected device the right channel will automatically be chosen. If not definite the channel can be selected from a popup window.

Actuator input
Output binary input
Energy
Power
Load error
Cancel

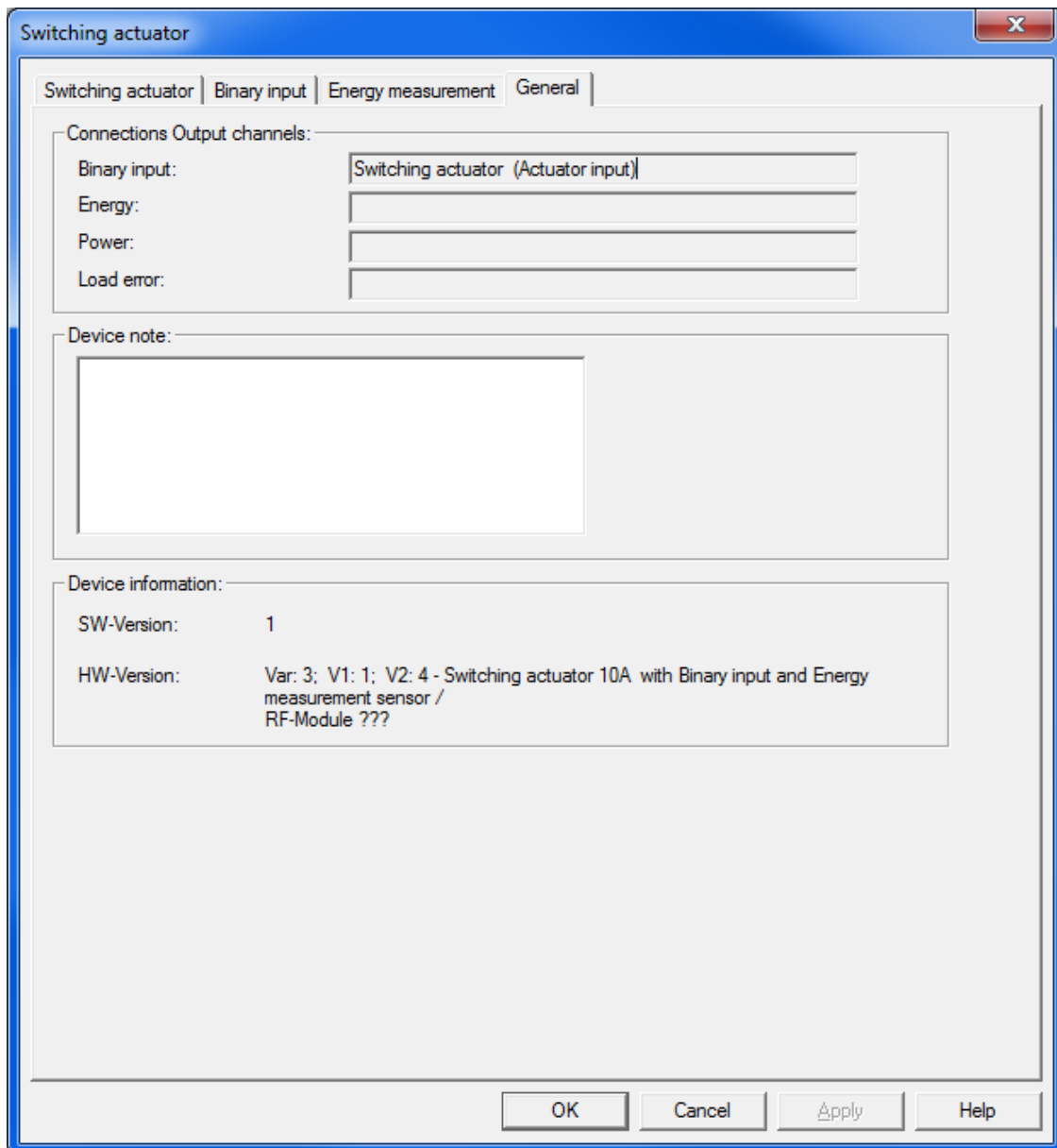
Configuration window – General:

In this window general information about the actuator is displayed and you have the possibility to edit the device note.

In the area ‚Connections Output channels‘ all devices that are connected to each output channel are listed.

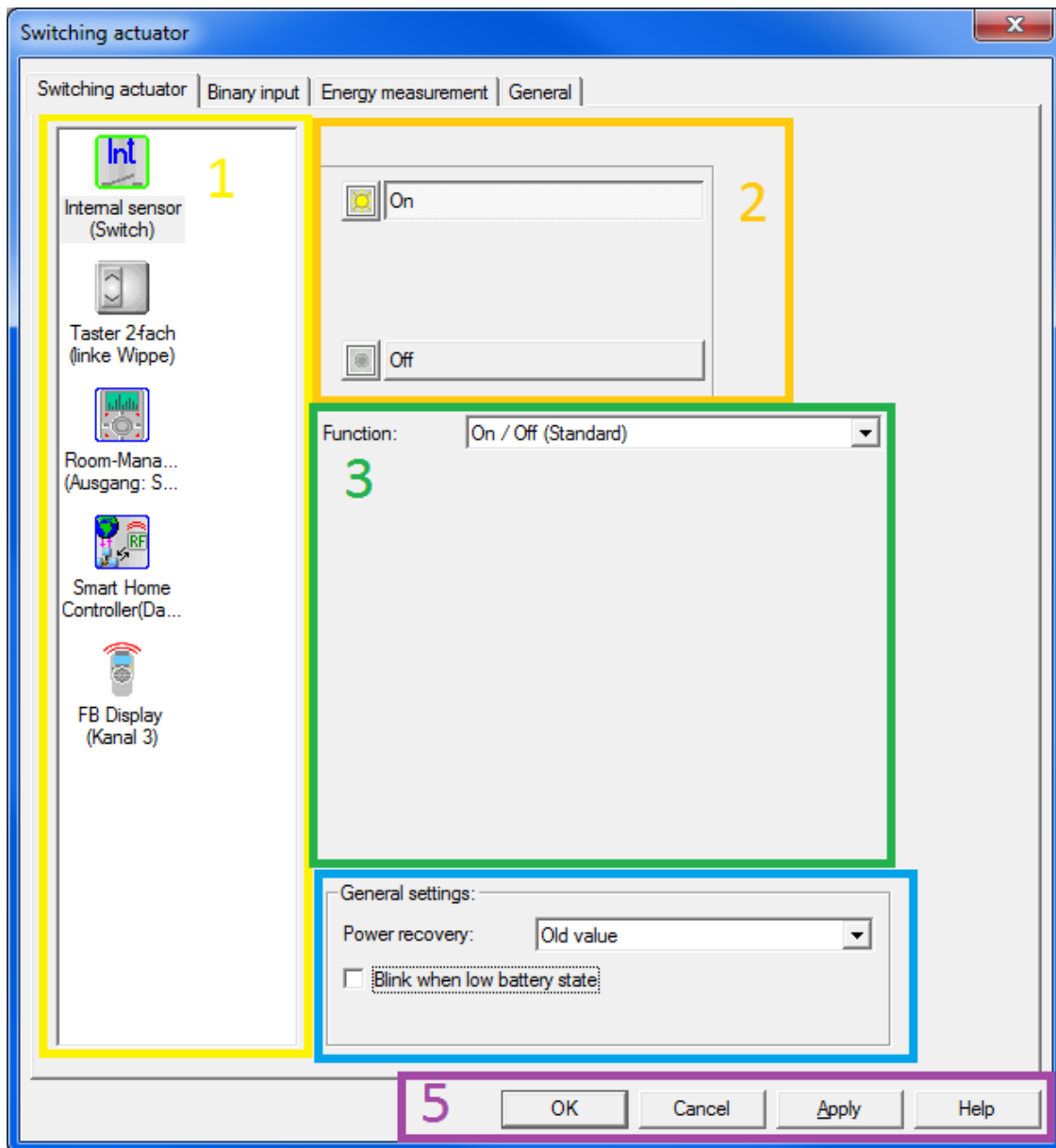
In the area ‚device note‘ a description of the device with up to 255 characters is possible (same as for the function Device note). This information will be saved in the project file.

In the area ‚Device information‘ all details about software- and Hardware-version are displayed.

**Actuator-Function:****Configuration window actuator – function:**

After drawing the desired connections to the actuator right click the device symbol and select 'Settings' to open the configuration window:

Depending on the connected sensors it will look as followed:



In the Tab 'Switching actuator' all configuration possibilities for the actuator function can be set.

The different areas of configuration are as followed:

1. The left area displays the sensors assigned to the switching actuator. The types with binary input will always have their internal input as first entry, but without function. By left-clicking one of these sensors you can select the function you want to carry out. The possible functions are depending on the type of the sensor resp. the RF-Commands of the sensor.

The different colored frames around the sensor symbols have the following meaning:



(only used for internal sensor): Depending on the configuration state (red – no function configured, green – Function configured)



(only intelligent devices): Will be displayed for an intelligent device that will receive the Status of the actuator (old Status message or new status connection)

2. The next area (top center) depends on the sensor and displays the commands a sensor can send to an actuator. They are depicted as icons, with the command buttons you can select from

situated next to them. As you will see later, different functions can now be assigned to these command buttons. In our case (internal binary input as switch) the icons stand for SWITCH ON and SWITCH OFF. If the selected sensor is an intelligent device you can additionally select if the status of the actuator will be sent to that device or not. (default: activated – also see [extended Status message](#))

3. In the function area you can select the different functions which the switching actuator carries out when it receives a specific command. There is a standard function for each sensor which the MRF defines after establishing the connection to a sensor. Some functions occupy more than just one command button, as we will see in the following function descriptions. Below there can be various slider controls (control time, delay time, interval time etc.), which allow you to set time-related settings for a functions.

4. In the lower area you can define the basic settings of an actuator.

In case the sensor battery is low, you can select whether or not the switching actuator should send a warning after switching it on (output blinks once).

Regarding power recovery, you can pre-set how the switching actuator should react to it. There are three options to choose from:

Old value (Standard): Actuator maintains the same state as before the power failure

On: After power recovery the actuator switches the output ON

Off: After power recovery the actuator switches the output OFF

'Send Status-Message after a state change' defines if the actuator will always send out its status message when the output state will be changed or not.

5. In the top lowest field are the command buttons:

OK: Confirms the settings entered and returns to the MRF main window.

Cancel: Discards the modifications carried out and returns to the MRF main window.

Info: Opens the Help dialog for Switching Actuator 10A/16A

All functions of the Switching Actuator:

On / Off (Standard), occupies 2 command buttons

Switches ON resp. OFF

On / Switch-on Delay, occupies 1 command button

On Command which is executed immediately or after an adjustable Delay time

Off / On with Switch-Off delay, occupies 1 command button

Off Command which is executed immediately or after an adjustable Delay time. In case of a delay time >0s the output will switch ON immediately and switch OFF after the delay time.

Off / Switch-OFF delay, occupies 1 command button - New

Off Command which is executed immediately or after an adjustable Delay time. Does not switch ON if the output is already OFF.

Off with Advance Warning, occupies 1 command button

Staircase function which switches ON immediately and switches OFF after an adjustable time.

The Switching Actuators Output is blinking 15 seconds before it switches OFF.

Push-button/Key Mode, occupies 2 command buttons

The Switching Actuator is only ON while its sensor is activated; Otherwise it is OFF

Surge, occupies 1 command button

The Switching Actuator toggles with every sensor activation its output Value.

Blinking, occupies 1 command button - Updated

The Switching Actuator starts to blink. You can adjust the interval time and the ON/OFF duty cycle (1-99% - minimum value cannot be <0.5s)

Activate Lock, occupies 1 command button - New

Locks the actuator against any further operation of other sensors with normal functions, the Lock can be permanently (can only be released by a sensor with 'Release Lock' function) or after a defined Lock time (10 minutes to 18 hours), the output action for Lock and Release Lock can be defined (ON, OFF, old value)

Release Lock occupies 1 command button - New

Releases the Lock and allows operation of the actuator by normal functions again, the

output action for Release Lock can be defined (ON, OFF, old value)

No Function, occupies 1 command button

Has no Function, However the actuator will send a Resend of the RF-command if in a group

Output-States of the Switching actuator:

A change between the different Switching-States of the Switching actuator will trigger a Status Message to connected devices. Depending on the type of the intelligent device (old or new) the Status message will be sent in the old format or in the new extended format (see extended status message).

The following states are possible:

ON – the output is ON

OFF – the output is OFF

Blinking – the actuator is just executing a blink function, the output state cannot be definitely ON or OFF as it changes over time

ON locked – The output is ON and any further operation by a normal switch function is not possible at the moment (exception ‚Release Lock‘)





OFF locked – The output is OFF and any further operation by a normal switch function is not possible at the moment (exception ‚Release Lock‘)





OFF over temperature – The output is OFF because the maximum internal temperature has been exceeded. An operation that switches the output ON again is only possible if the internal temperature falls below 15°C of the maximum value.





Functions for Pushbuttons, Remote control, intelligent devices and Binary inputs Mode 4:


On / Off (Standard)  ON /  OFF,  and  free, only for  selectable

On / Switch-on Delay free selectable for  ,  ,  and 





Off / On with Switch-Off delay free selectable for  ,  ,  and 





Off / Switch-off Delay free selectable for  ,  ,  and 





Off with Advance Warning free selectable for  ,  ,  and 

Push-button/Key Mode for  ,  or  ,  ; only for  oder  selectable

Surge only for  and  selectable



Blinking free selectable for  ,  ,  and 

Activate Lock free selectable for  ,  ,  and 

Release Lock free selectable for  ,  ,  and 



Functions for Binary inputs Mode 1, Binary inputs Mode 3 (Pushbutton) and local inputs Mode 1:

Surge (Standard) only for  selectable

On / Switch-on Delay free selectable for  and 



Off / On with Switch-Off delay free selectable for  and 



Off / Switch-off Delay free selectable for  and 

Off with Advance Warning free selectable for  and 

Push-button/Key Mode for  and  , only for  selectable



Blinking free selectable for  and 

Activate Lock free selectable for  and 



Release Lock free selectable for  and 













Functions for Binary input Mode 2 and 3 (Switch), Motion detector and local input Mode 2:

On / Off (Standard)  ON /  OFF, only for  selectable







On / Switch-on Delay free selectable for  and 

Off / On with Switch-Off delay free selectable for  and 

Off / Switch-off Delay free selectable for  and 

Off with Advance Warning free selectable for  and 
Push-button/Key Mode free selectable for  and 
Surge free selectable for  and 
Blinking free selectable for  and 
Activate Lock free selectable for  and 
Release Lock free selectable for  and 

Functions for Room controller, temperature input and analog input:

On / Off (Standard)  ON /  OFF, only for  selectable
On / Switch-on Delay free selectable for  and 
Off / On with Switch-Off delay free selectable for  and 
Off / Switch.off Delay free selectable for  and 
Off with Advance Warning free selectable for  and 
Push-button/Key Mode free selectable for  and 
Surge free selectable for  and 
Blinking free selectable for  and 
Activate Lock free selectable for  and 
Release Lock free selectable for  and 

See also:

[Switching actuator 10A/16A - General](#)
[Switching actuator 10A/16A – Binary input](#)
[Switching actuator 10A/16A – Energy measurement](#)
[Switching actuator 10A/16A – Extended Status message](#)

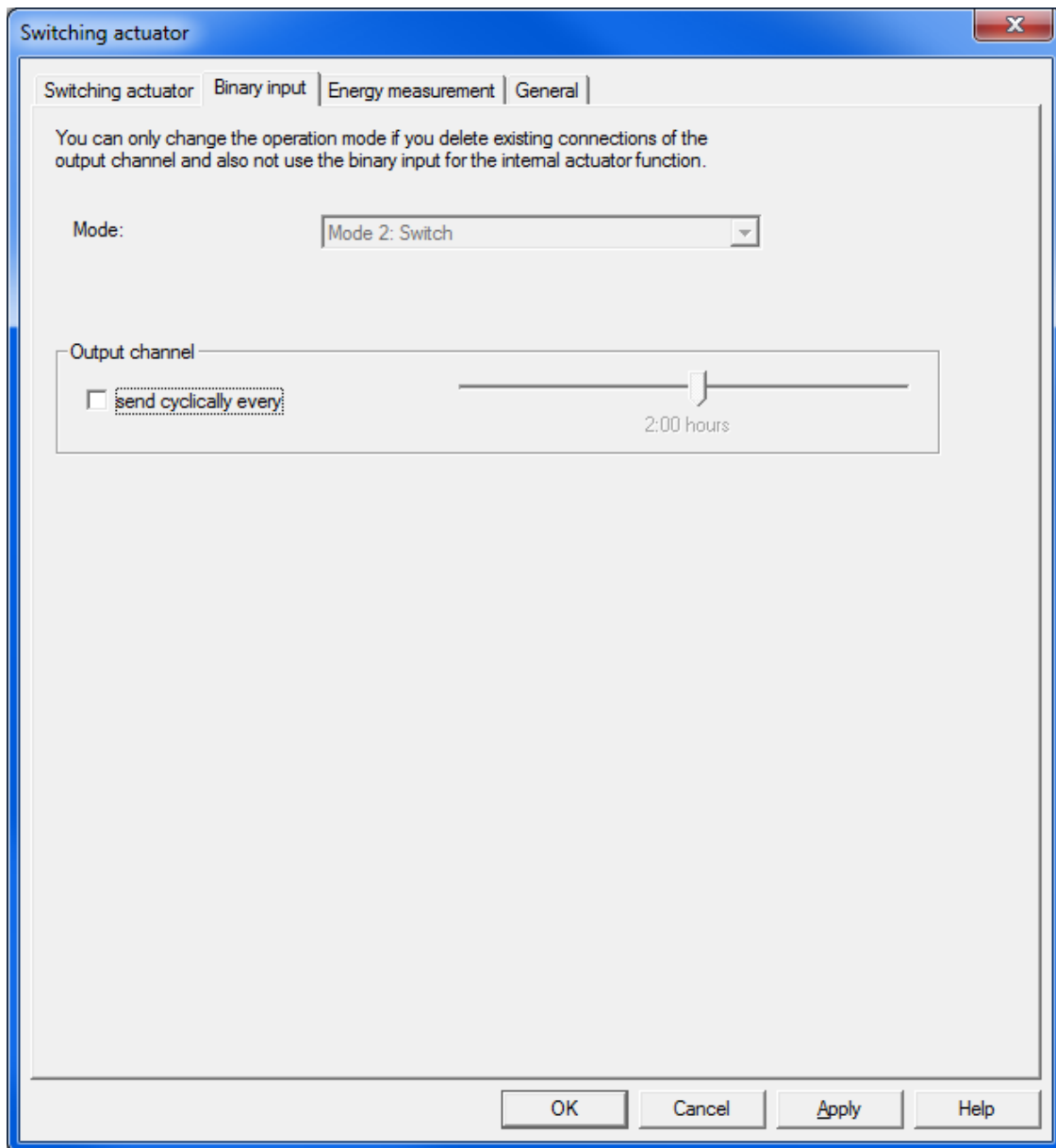
Binary input – function:

In the tab 'Binary input' you see all configuration possibilities for the binary input function.

The setting of the detection mode similar to the normal binary input is: Mode 1 – Pushbutton, Mode 2 – Switch;

The mode cannot be changed if a switch function is already configured for the binary input in the internal actuator function or the binary output channel is connected to any other device.

For the binary output channel the option for cyclic sending can be configured (only Mode 2) with a time between 10 minutes and 18 hours. The output channel will only be sent if there is a connection to another device.



also see:

[Switching actuator 10A/16A - General](#)

[Switching actuator 10A/16A – Actuator function](#)

[Switching actuator 10A/16A – Energy measurement](#)

[Switching actuator 10A/16A – Extended Status message](#)

Energy measurement - function:

In the tab 'Energy measurement' you can see all configuration possibilities for the Energy measurement function.

Energy:

For the output channel of the energy the cyclic time can be set between 10 minutes and 1 hour.

Power:

The sending frequency for a power change can be set. It depends on the nominal power change over a certain time.

Additionally the Power channel will be sent at least every 50 minutes cyclically even when there is no change in the power value.

With the option 'Send the status message also if the power value changes' the new extended

status message of the actuator will also be sent if the power value changes according to the sending frequency slider and the power channel is not connected to other devices.

Load error:

The load error output is a binary output that can be connected to all actuators and inputs of intelligent devices. It is connected to the power measurement and checks if the actual power value when the output is switched ON falls below the entered minimum nominal Load. If that is the case the output will switch to ON (otherwise it's OFF) as long as this error state is active. If the entered value is 0 the function is disabled.

Generally we recommend setting the min. load value at least 10% lower than the expected load value if the output is ON. The output channel will be sent cyclically every 150 minutes independent of a state change.

Generally like all channels of the energy measurement function the load error output will only be sent if it has a valid connection to another device.

The screenshot shows a software window titled "Switching actuator" with a close button (X) in the top right corner. The window has four tabs: "Switching actuator", "Binary input", "Energy measurement" (which is selected), and "General".

Under the "Energy measurement" tab, there are three main sections:

- Energy:** A slider control for "send cyclically every" with a value of "1:00 hours".
- Power:** A slider control for "Max. precision" with a value of "3,68kW". Below the slider, there is a checkbox labeled "Send the status message also if the power value changes" which is currently unchecked.
- Load error:** A text input field for "min. nominal Load value:" with the value "0" and a unit "W".

At the bottom of the window, there are four buttons: "OK", "Cancel", "Apply", and "Help".

also see:

[Switching actuator 10A/16A - General](#)

[Switching actuator 10A/16A – Actuator function](#)

[Switching actuator 10A/16A – Binary input](#)

Switching actuator 10A/16A – Extended Status message

Extended Status message:

General Information:

The extended status message includes a lot of information about the actual state of the Switching actuator for displaying purpose or further use of the information in intelligent devices.

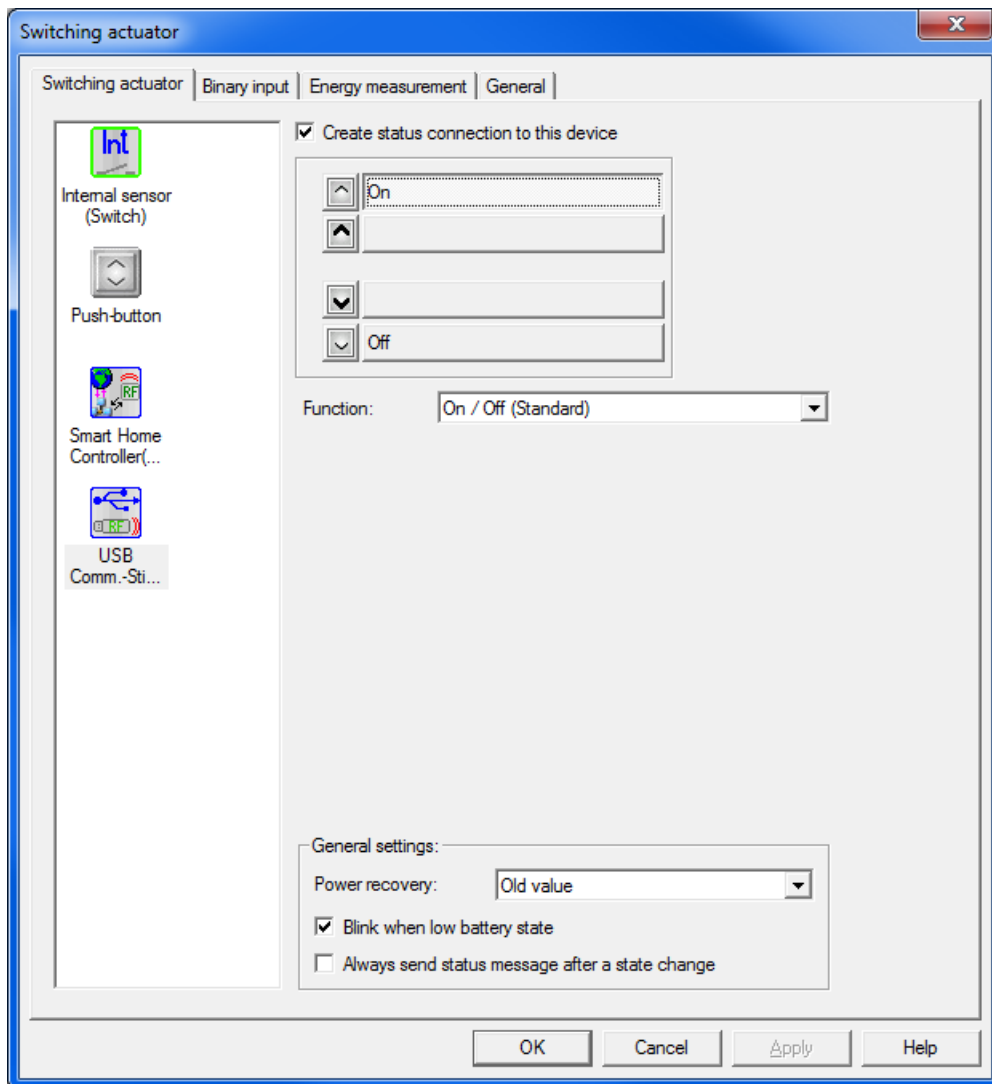
Different to the old Status message (old actuator generation) the new extended Status message has its own Status channel and can therefore be routed to intelligent devices by any other mains supplied device that is capable of Routing (even old actuators).

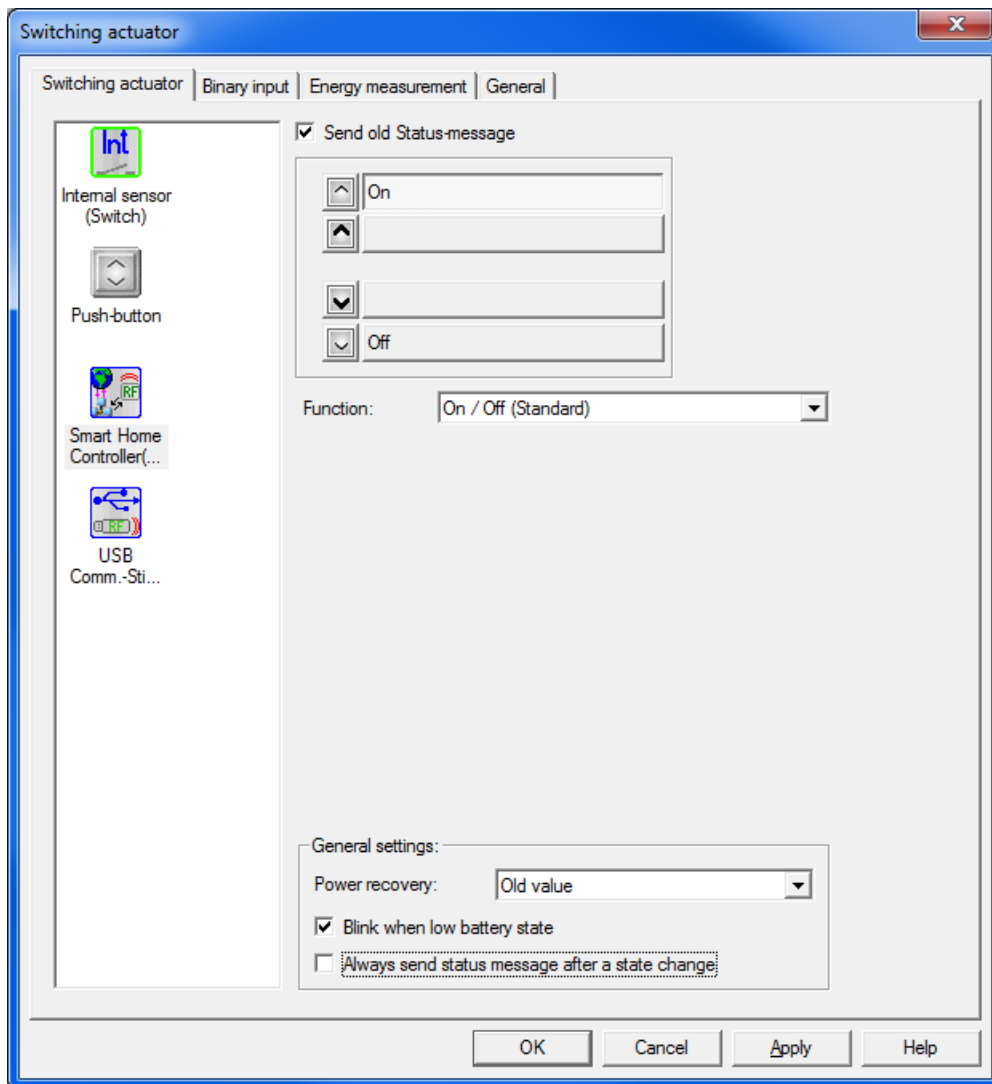
The connection of the Status channel will be done automatically by the MRF if a Datapoint of an intelligent device will be connected to the actuator input. The option of the status connection can be activated/deactivated for each intelligent device in the configuration window of the actuator function (deactivating can make sense to save datapoint-list entries, Routing entries etc. if the status information is not needed). If there are multiple intelligent device connected to the actuator the connection path of the Status channel will make sure that all device receive the status information properly.

ATTENTION! The Connection of the new Status channel will only be supported by the following devices:

Device	Support with version
Room-Manager	V41a (only for Outputs 1-10)
Smart Home Controller	RF-V2.0
USB-RF-Comm.-Stick	RF-V2.0
Ethernet CI	RF-V2.0
Old USB-Komm.-Interface	not supported
Home-Manager	not supported

If there are connections to old intelligent devices that do not support the new extended Status message the actuator will behave like an old actuator and send the status message in the old format (and also not from the status channel). This also applies to the mixed mode of old and new connected intelligent devices. The new Status channel will then be connected to the new intelligent devices but only the old Status message will be sent for a state change. However if old intelligent devices are connected but the option 'Send old Status message' in the Configuration window is deactivated for them then the status message will be sent in the extended format to the connected new intelligent devices.





Structure of the new extended Status-message:

The extended Status message includes the following information and possible values:

- Device type: Switching actuator
- Device variant: 0, 1, 3, 4, 5, 7 see [Switching actuator 10A/16A - General](#)
- Output State: OFF, ON, OFF Locked, ON Locked, BLINKING, OFF Overtemperature
- Status binary input (if available): ON, OFF, Pressed, not pressed, unknown
- Internal temperature: 0-125°C
- actual active Power (if available): x.xW (max. 0-3700W)
- Load error (if available): OK, Not OK

If the option 'Send Status-Message after a state changes' is activated the extended Status-message will be sent automatically every time the 'Output State' changes. Changes to other information will not trigger the sending (expectation is the power value if the specific option is activated see Switching actuator 10A/16A Energy measurement). Actuators with energy measurement will send their status slightly delayed for around 2 seconds in order to wait for a valid power measurement.

Which of this information is displayed on the intelligent device depends on the type of the intelligent device and 3rd Party application it uses.

Speciality for group functions:

If the Switching actuator is controlled by a sensor that controls a big group of new actuators the

sending of the new status message of each new actuator will be delayed differently in order to have a reliable reception of the status without telegram collisions or losses. Therefore it can take while for bigger groups that the status of all actuators will be sent to the intelligent device (around 1 minute for a group of 60 devices)

Configuration examples

[Configuration example Switching actuator](#)

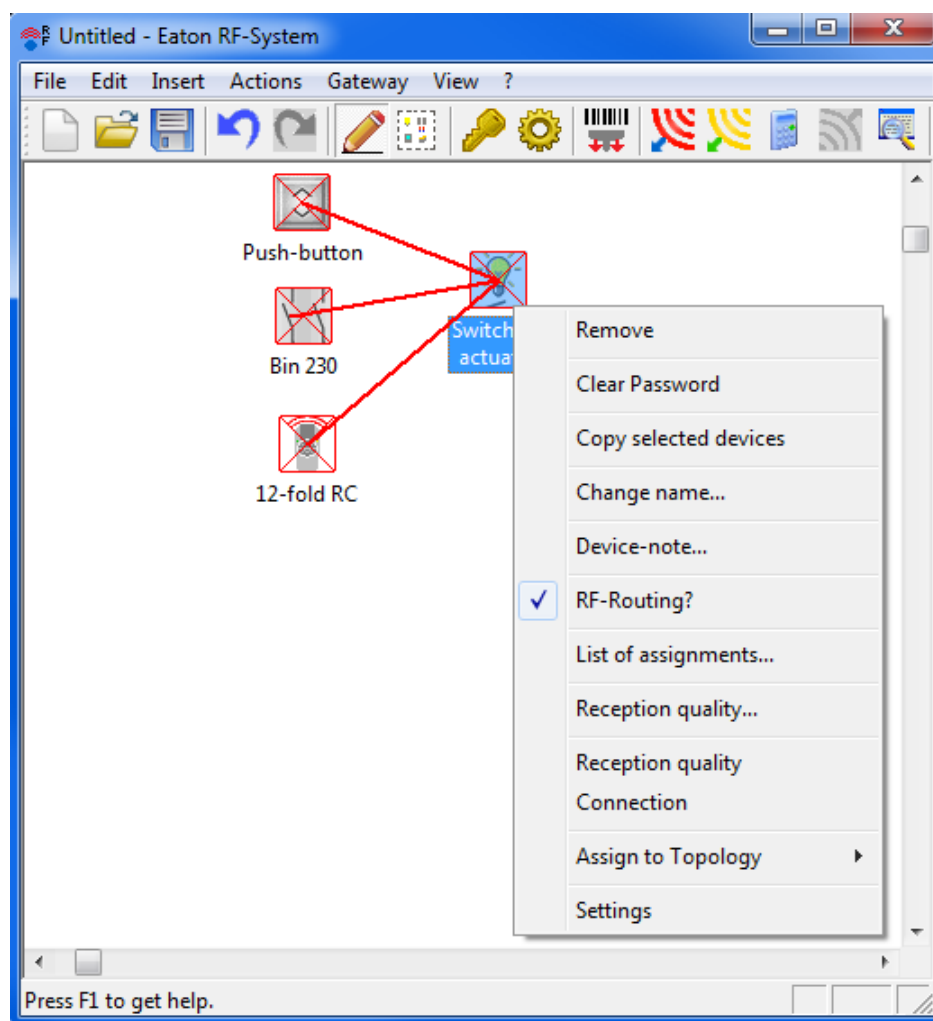
[Configuration example Dimming actuator](#)

[Configuration example shutter actuator](#)

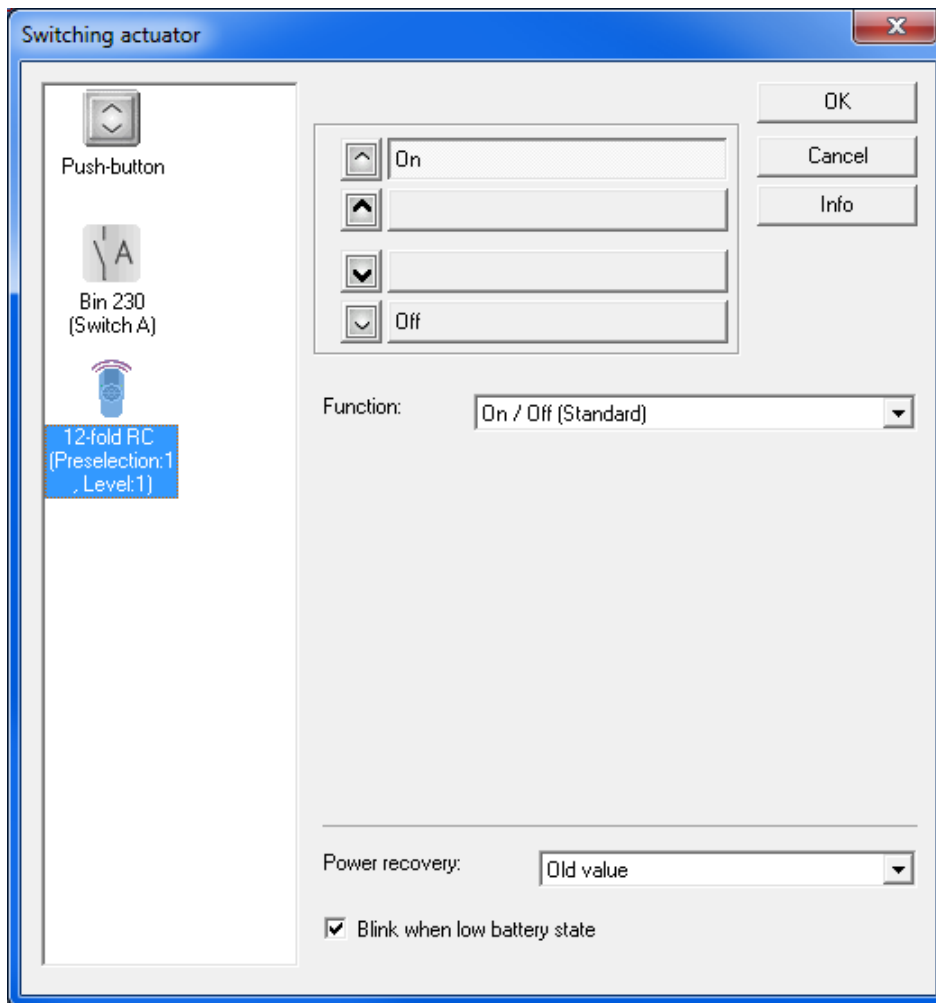
[Configuration example Room controller](#)




Configuration Example of the Switching Actuator

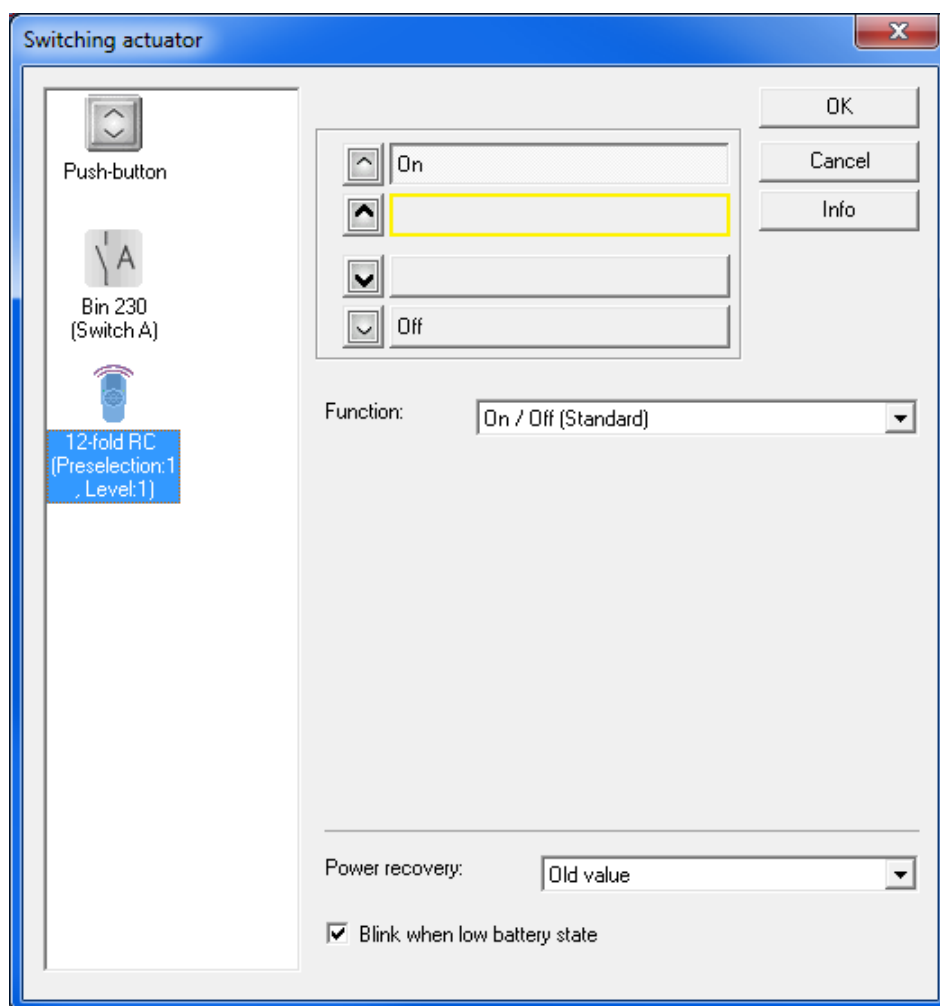
1. Right-click the switching actuator and select *Settings* in the *Drop Down Menu*



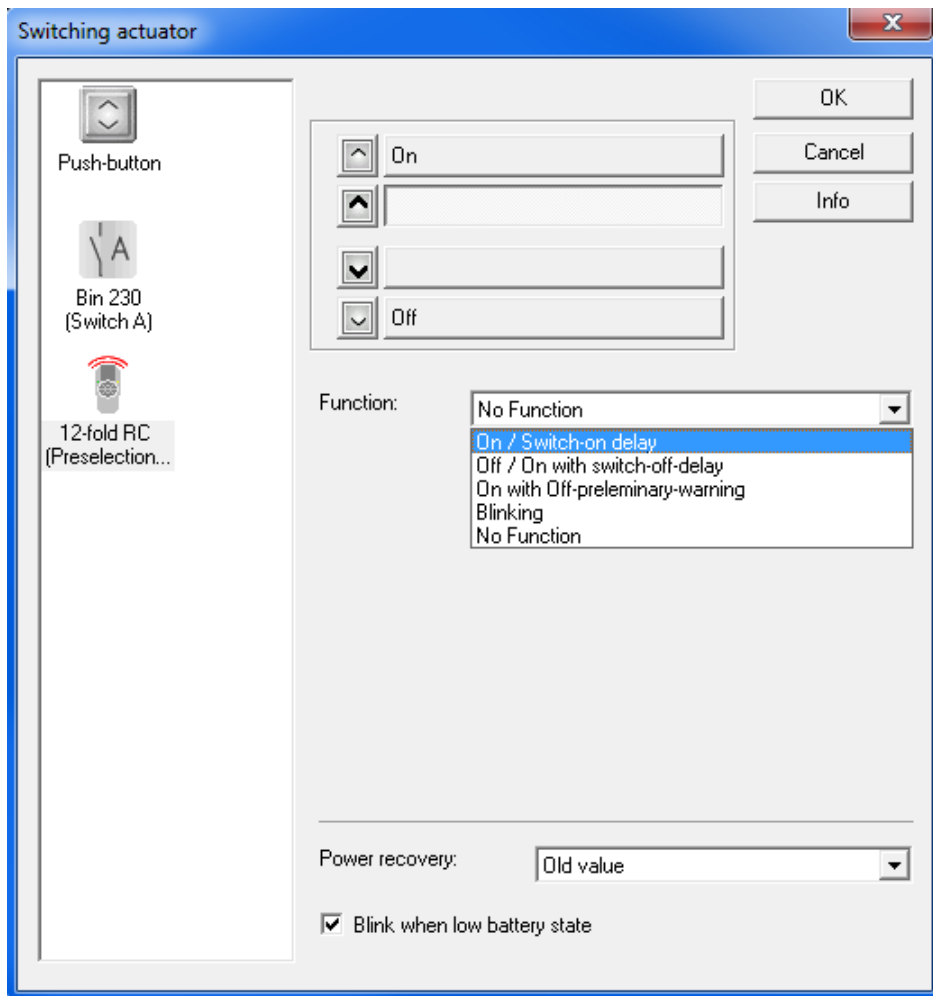
2. The configuration window of the switching actuator opens.
In the left box, where you can select the assigned sensors, left-click the sensor (in our case the hand-held transmitter) whose assignment you wish to configure.




3. The standard function ON/OFF at  and  is pre-set and will not be modified. Instead, we click the command button next to  (long push at the top of the key) to assign a function.



4. Now we select the desired function (e.g.: On / switch-on delay)

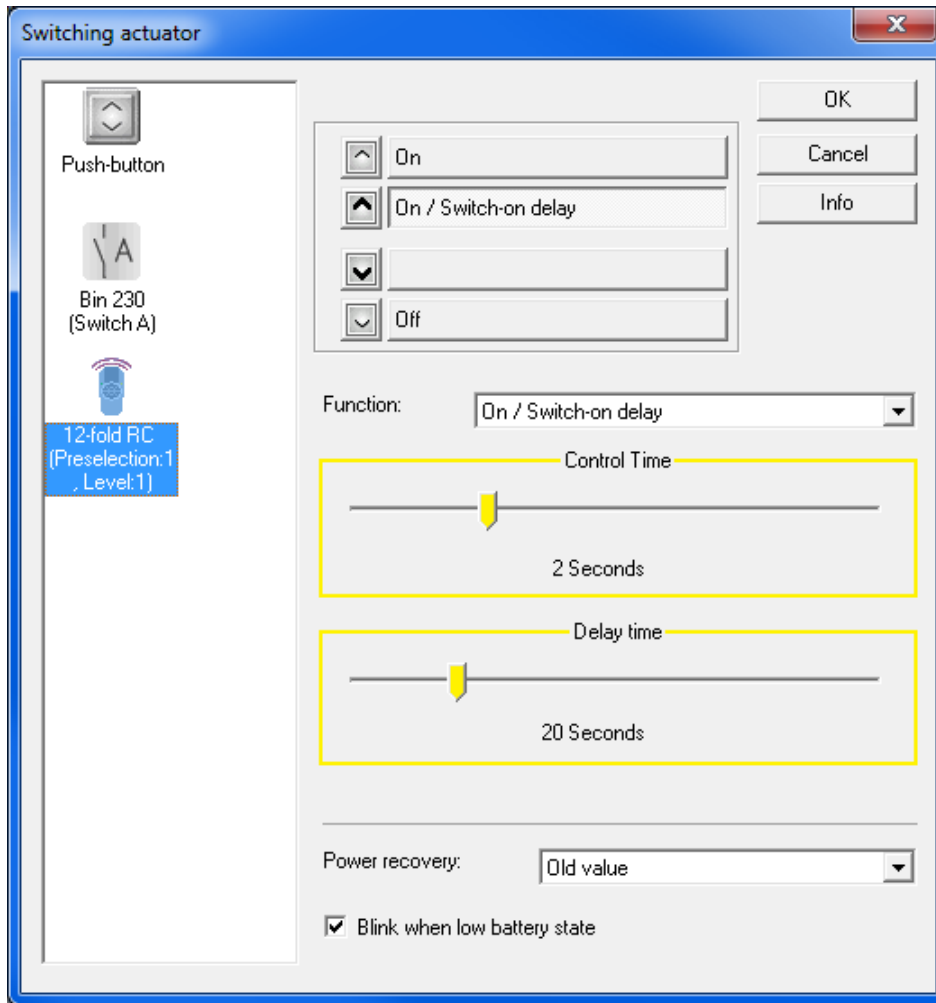



5. As you will see, the command button  now displays the name of our function and you can select the *control time* and *delay time* in the functions box by using the slider controls.

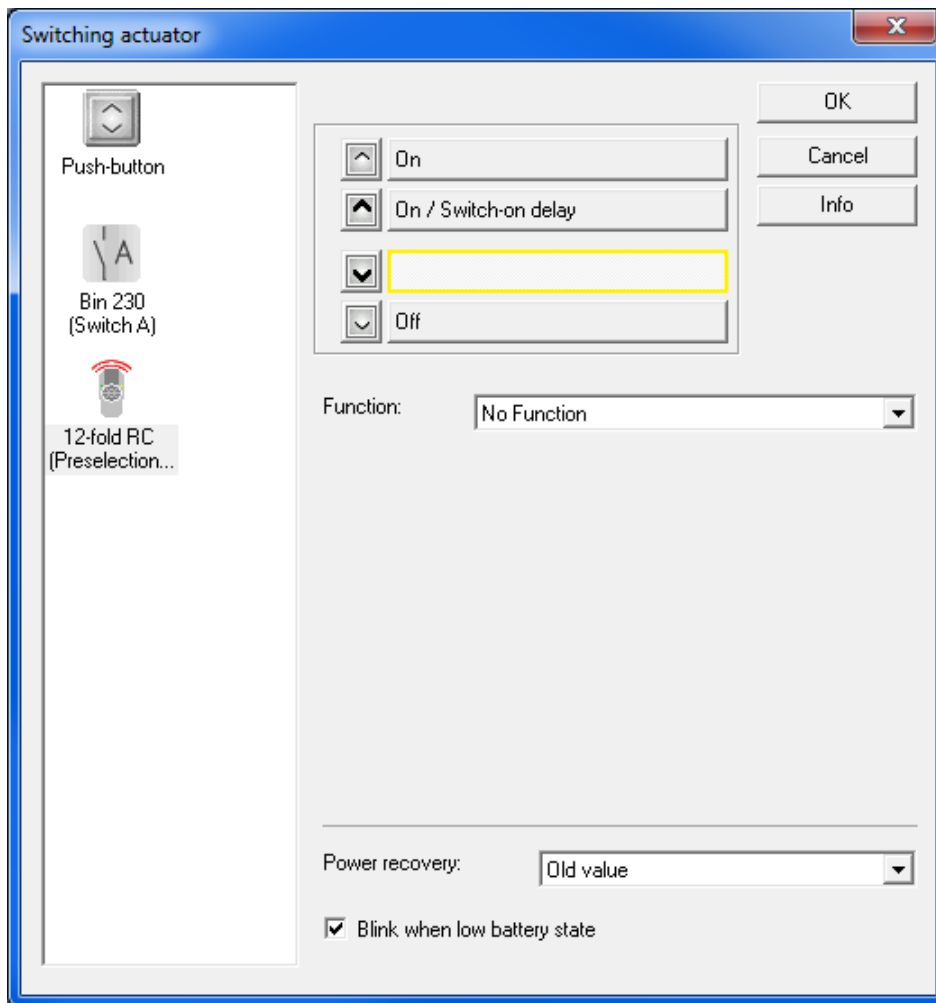
Control time: Indicates how long a key needs to be activated until the function is started in the switching actuator.

Delay time: Indicates how long after a command the function will be started

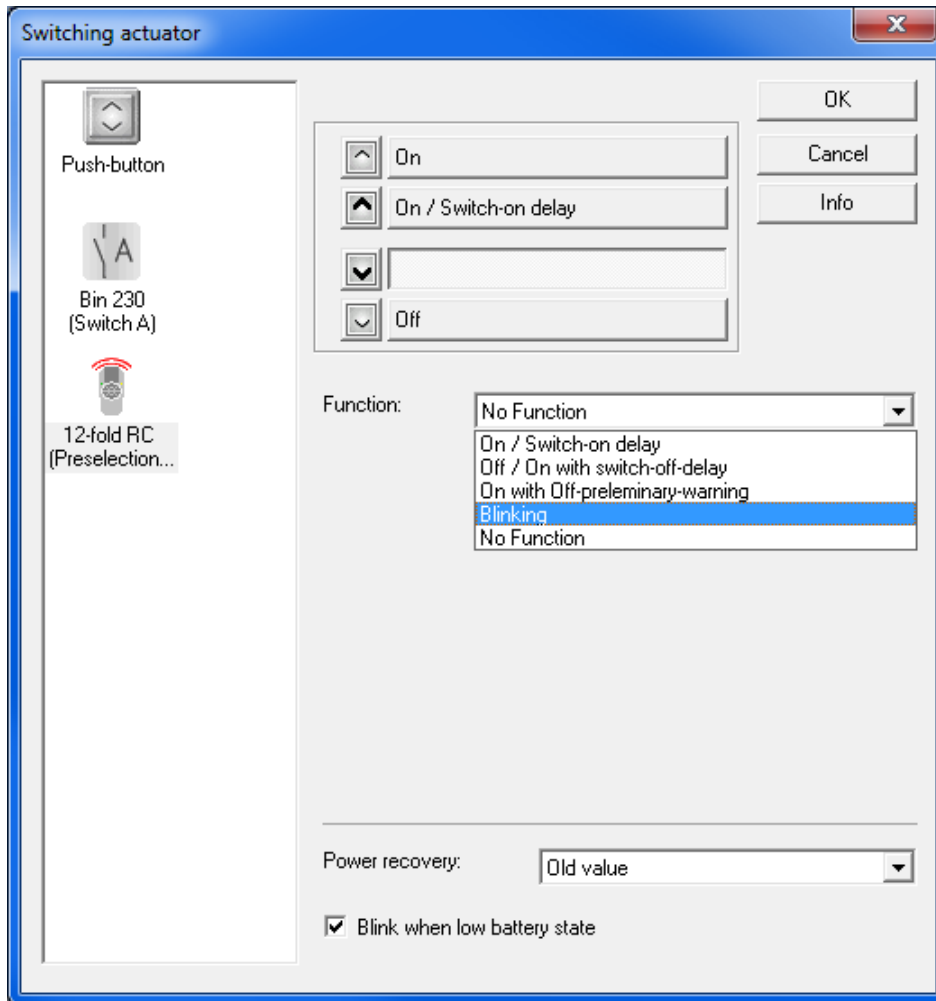
In our example: Control time = 2 seconds, delay time = 20 seconds



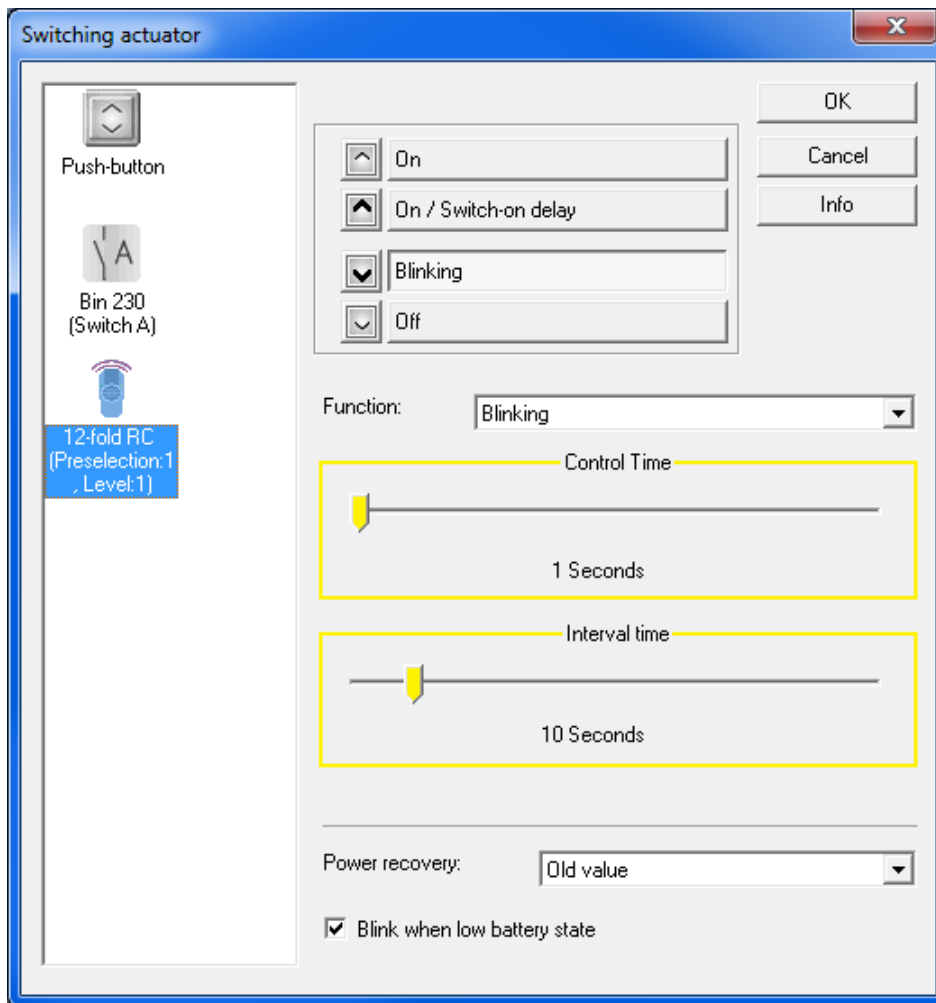
6. Then we select the command button for  (long push at the bottom of the key).



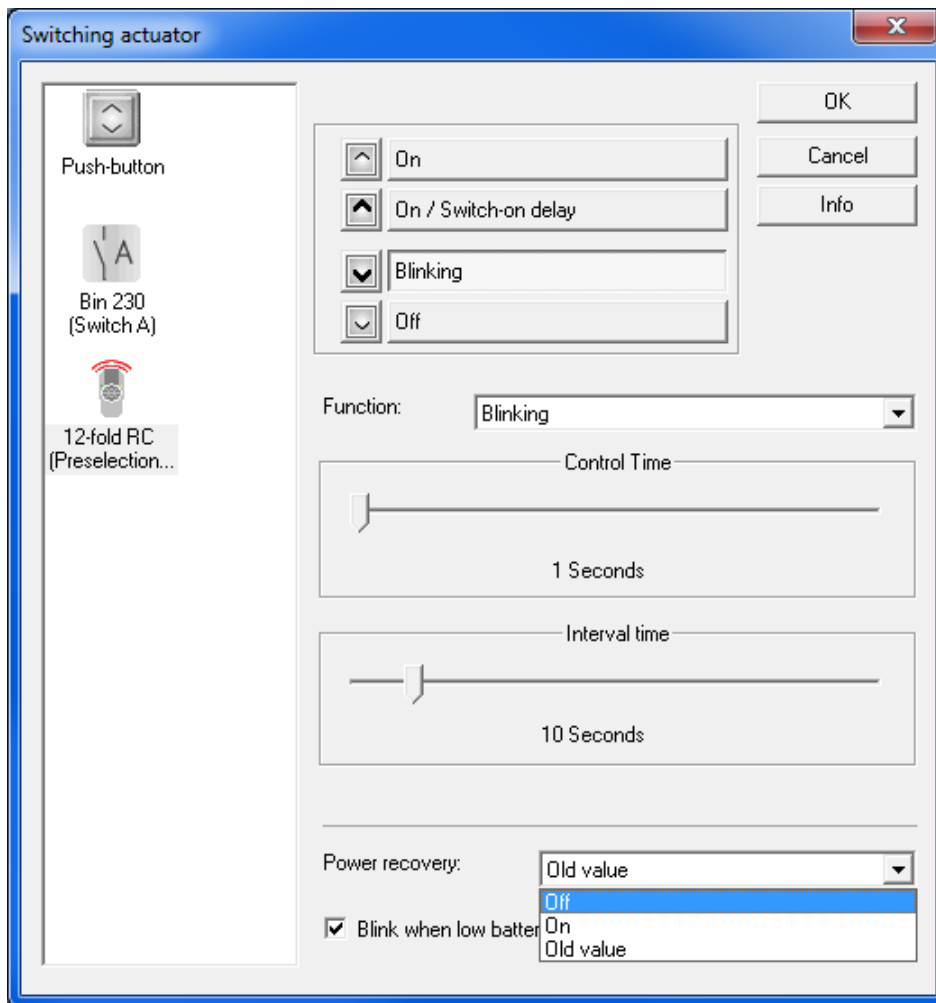
7. And assign the function *Blinking* to it.



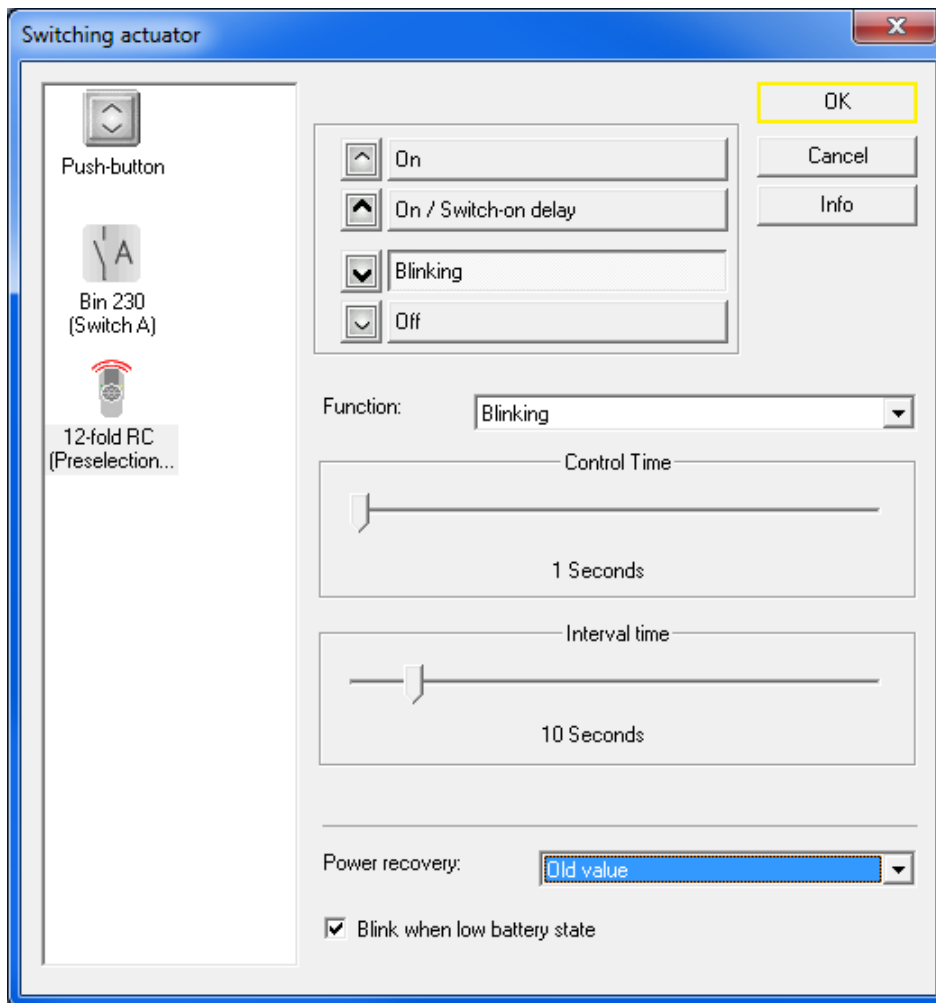
8. Again select the control time (1 second) and the interval time (10 seconds).
An interval time of 10 seconds means that the output will change its status every 5 seconds.



9. Now that all functions have been configured, let us select the behaviour in case of power recovery (Off).





10. The switching actuator configuration is completed and we confirm the configuration by pressing the OK command button, which closes the configuration window and takes us back to the MRF main window.



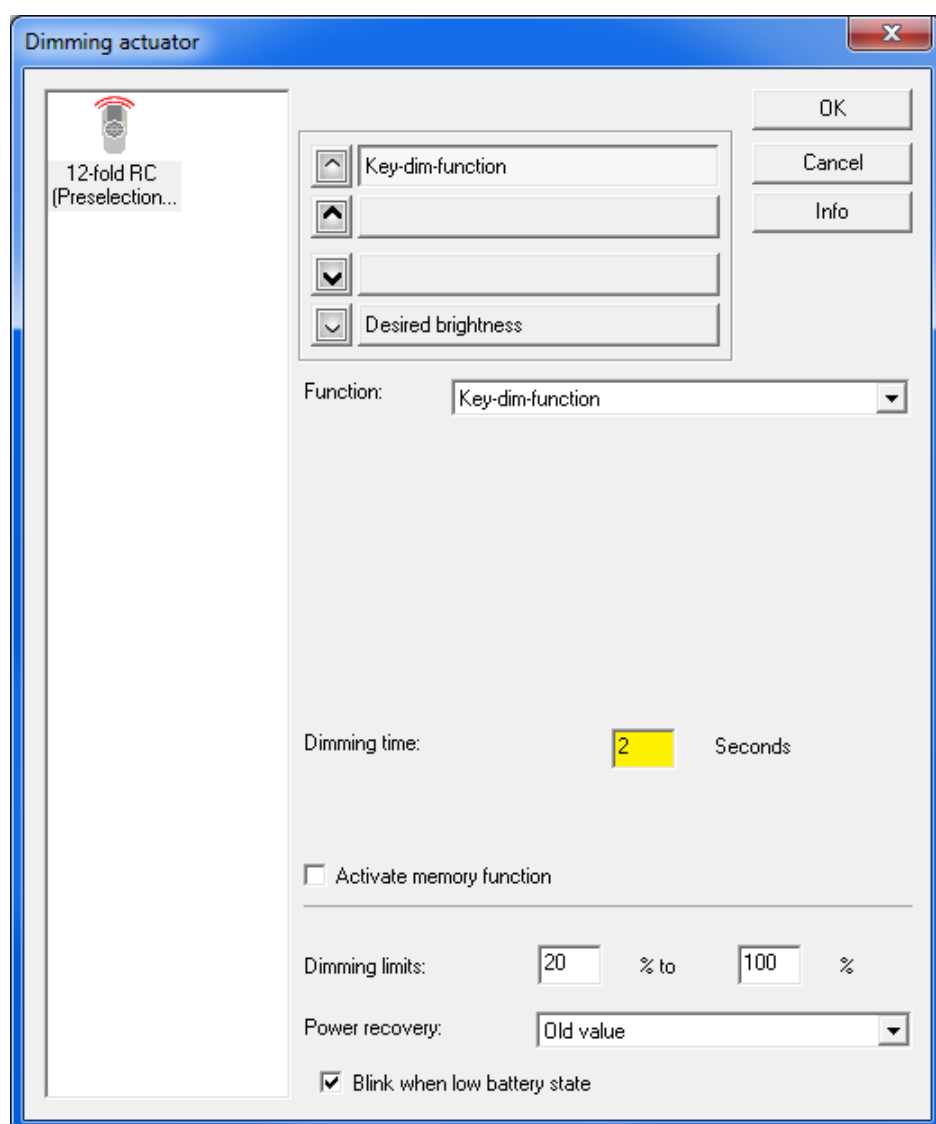
Configuration Example of the Dimming Actuator

For basic configuration, such as selecting the functions, etc., please turn to [Configuration Example of the Switching Actuator](#)

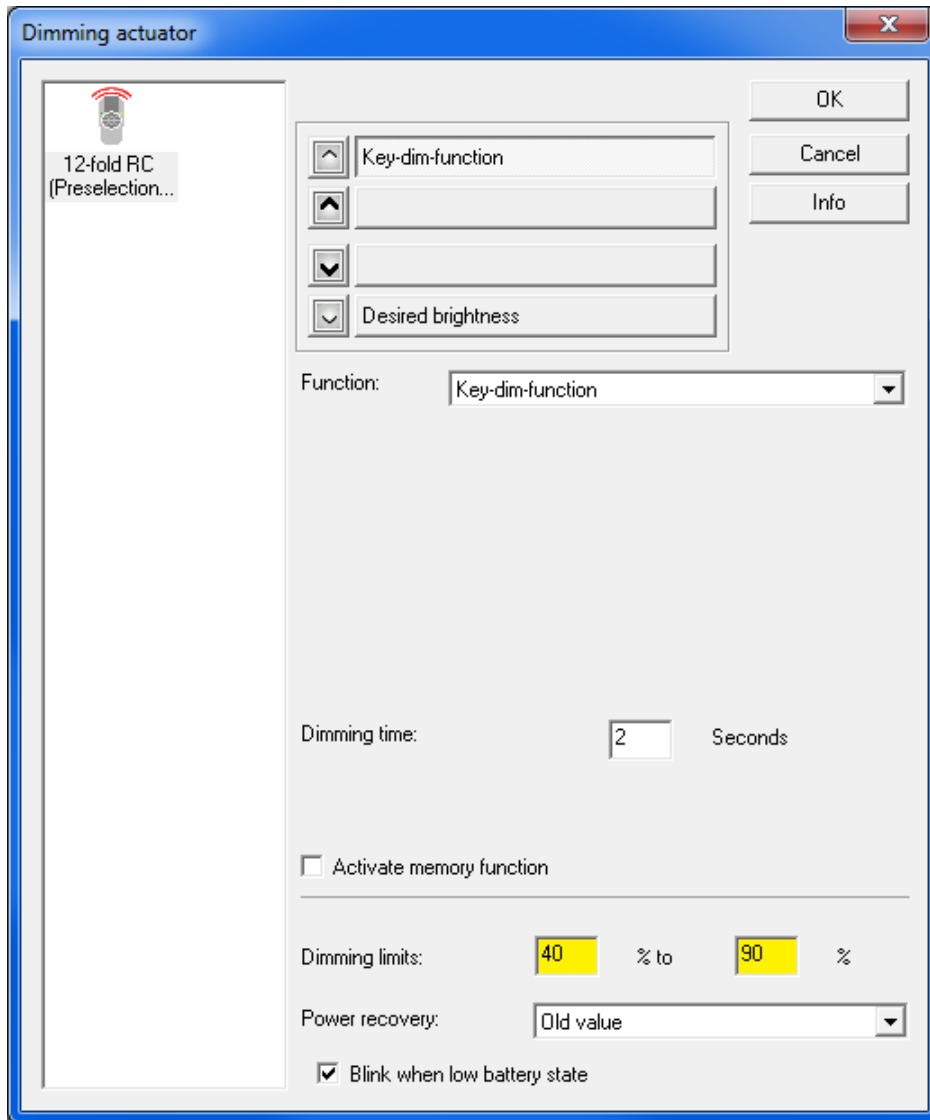
In this item you will learn how and why to set a dimming time, a desired brightness value and dimming limits. In our example let's use the hand-held transmitter for the dimming actuator.




We assign the following functions:  to *Key dimming function* and  to *desired brightness*


1. Click the command button we assigned the *key dimming function* to and change the dimming time from the standard setting (5 seconds) to 2 seconds.

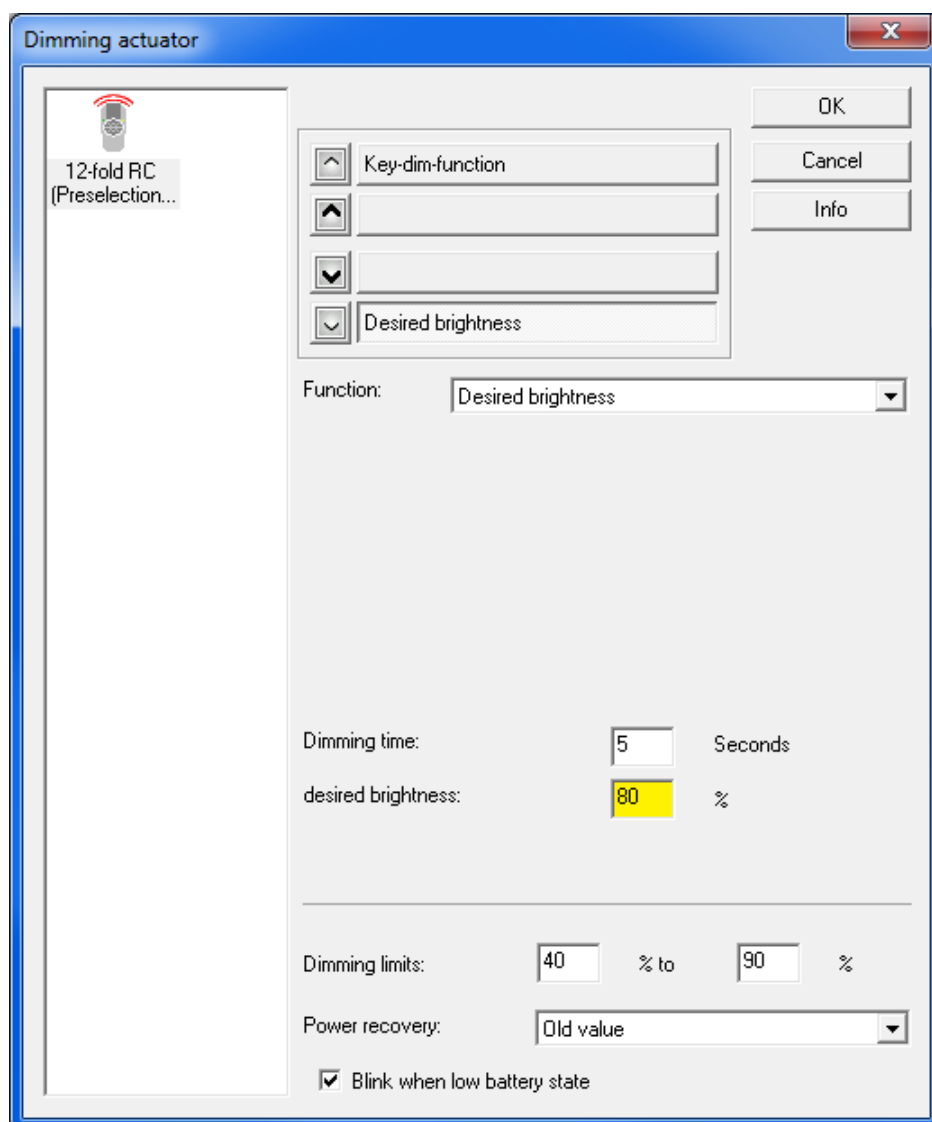


2. Then we change the dimming limits from the standard setting (20% to 100%) to 40% to 90%.



This modification means that the command  sent by the hand-held transmitter starts dimming at 40% brightness and will reach a brightness of 90% within 2 seconds. These settings are only valid for the function *Dimming* at , not for the function *ON/OFF* at .

3. Then we click the function *desired brightness*  and set the value to 80%. The dimming time remains 5 seconds (standard) and the dimming limits remain 40% to 90%.



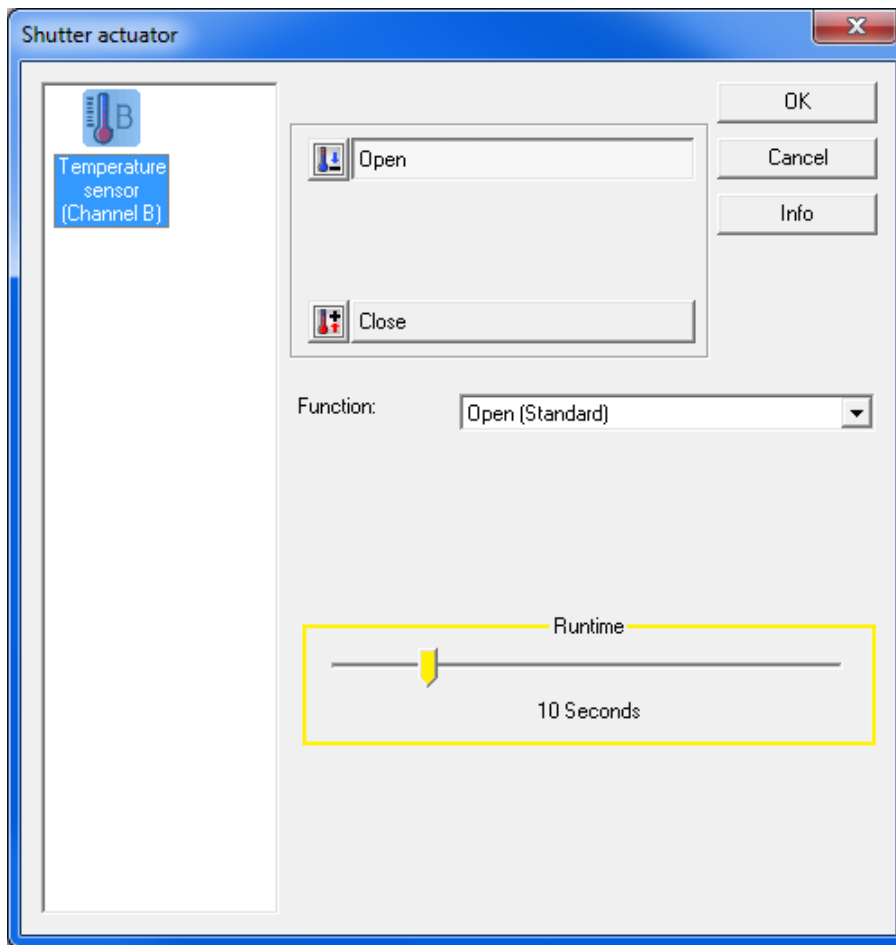
After a  command, the actuator will now dim to the value of 80%.

Configuration Example of the Shutter Actuator

For basic configuration, e.g. selecting the functions, please refer to [Configuration Example of the Switching Actuator](#)

A shutter actuator has no selection options for *operating status after power recovery* nor for *Blinking in case of a low sensor battery*. The only time-related settings that can be carried out are for the control time (with a long push at the key or push-button) and the runtime (for functions such as open, close, etc.)

1. The runtime can be changed by moving the slider control to 10 seconds (min. 1 second to max. 1h, standard 1 minute).



Configuration Example of the Room Controller



Sending a switching command:

A room controller is supposed to send a switching command to a switching actuator (valve) at a switching point of 25° C (hysteresis 1°C).

1. Connect the room controller to a switching actuator (See [Connection](#))
2. Set the desired values

The 'Room Controller' dialog box has a blue title bar with a close button (X). Inside, there are two radio buttons: 'Send switching commands' (selected) and 'Send temperature value'. To the right of these are input fields for 'Switching point 1: 21 °C', 'Switching point 2: 18 °C', and 'Hysteresis: 1 °C'. On the far right are three buttons: 'OK', 'Cancel', and 'Info'. Below the radio buttons is a checkbox 'send cyclically every' which is unchecked. To its right is a slider control with a yellow arrow pointing to the right, labeled '2:00 hours'. At the bottom, there is a 'Temperature offset:' label followed by an input field containing '0' and a '°C' unit.

Then confirm with OK.

Result: If the adjustment wheel is set to zero and the temperature is 25°C, the room controller sends the command “below”  to the switching actuator. It is not until a temperature of 24°C (as the hysteresis is 1°C) is reached that it sends “beyond” . The reaction depends on the configuration of the switching actuator.

Sending a temperature value:

The room controller is supposed to send a temperature value to the Home Manager (cyclically, every 10 minutes).

The 'Room Controller' dialog box has a blue title bar with a close button (X). Inside, there are two radio buttons: 'Send switching commands' (unchecked) and 'Send temperature value' (selected). On the far right are three buttons: 'OK', 'Cancel', and 'Info'. Below the radio buttons is a slider control with a yellow arrow pointing to the left, labeled 'Most exact measurement' on the left and 'Maximum battery life' on the right. Below this is a checkbox 'send cyclically every' which is checked. To its right is a slider control with a yellow arrow pointing to the left, labeled '10 Minutes'. At the bottom, there are two labels: 'Temperature offset:' followed by an input field containing '0' and a '°C' unit, and 'Adjusting wheel offset:' followed by an input field containing '0' and a '°C' unit.

Select the desired mode, and by means of the slider control, select *Send cyclically every 10 minutes*.

Then confirm with OK.

Icons and their meaning

Device icons:



[Switching actuator](#)



[Dimming actuator](#)



[Shutter actuator](#)



[Push-button](#) 1-fold



[Push-button](#) 2-fold



Push-button 1-fold (left rocker)



Push-button 2-fold (right rocker)



4-fold [pushbutton](#)



4-fold pushbutton (Rocker 1)



4-fold pushbutton (Rocker 2)



4-fold pushbutton (Rocker 3)



4-fold pushbutton (Rocker 4)



old Hand-held transmitter



Binary input Bat/230 Mode 1



Binary input Bat/230 Mode 1 (Channel A) resp. Mode 3 (Channel A)



Binary input Bat/230 Mode 1 (Channel B)



Binary input Bat/230 Mode 2



Binary input Bat/230 Mode 2 (Kanal A)



Binary input Bat/230 Mode 2 (Kanal B) bzw. Mode 3 (Kanal B)



Binary input Bat/230 Mode 3



Binary input Bat/230 Mode 4



[Room controller](#)



[Temperature input](#)



Temperature input (Channel A)



Temperature input (Channel B)



Home Manager RF



Protected access to the device (enter the correct system password)



For this device no data have been scanned yet



[Analog actuator](#) setting 0-10V



[Analog actuator](#) setting 1-10V



[Analog input](#)



Analog input Channel A



Analog input Channel B



[2x remote control](#)



[12x remote control](#)



[Room controller humidity](#)



Room controller humidity - temperature channel



Room controller humidity - humidity channel



[Room-Manager](#)



[Routing actuator](#)



[Impulse Input](#)



[Energy measuring Sensor](#)



Remote Control with Display



[Heating actuator](#)



[BOS/COS Interface](#)



[Pendant remote control](#)



[MEP device](#)



[Ethernet CI](#) with activated Ethernet Routing



[Ethernet CI](#) without Ethernet Routing and not used as

Communication node



Ethernet-Communication node



measurement sensor



Function icons:



[Ethernet CI](#) with activated Ethernet Routing used as

[RF Radiator thermostat](#)

[USB-Communication Stick](#)

[Smart Home Controller](#)

[Switching actuator 10A/16A](#)

[Switching actuator 10A/16A](#) with Binary input

[Switching actuator 10A/16A](#) with Binary input and Energy

Internal Binary input Mode 1 of [Switching actuator 10A/16A](#)

Internal Binary input Mode 2 of [Switching actuator 10A/16A](#)

[New Router](#)

[New Router with Logic](#)

Frame for a device that has been imported by Barcode-Scan and not yet been checked by RF. See [Barcode Scan](#)

Frame for an intelligent device that will receive a Status message. Displayed only in the Sensor list of the Actuator Configuration window

Frame for the internal Binary input of a [Switching actuator 10A/16A](#) if no function has been assigned

Frame for the internal Binary input of a [Switching actuator 10A/16A](#) if a function has already been assigned

Router with low usage

Router with medium usage

Router with full usage

Short push at the push-button up

Long push at the push-button up

Long push at the push-button down

Short push at the push-button down



Switched ON



Switched OFF



Falling below the preset temperature



Exceeding the preset temperature



Humidity value not reached



Humidity value exceeded

How does the routing work?

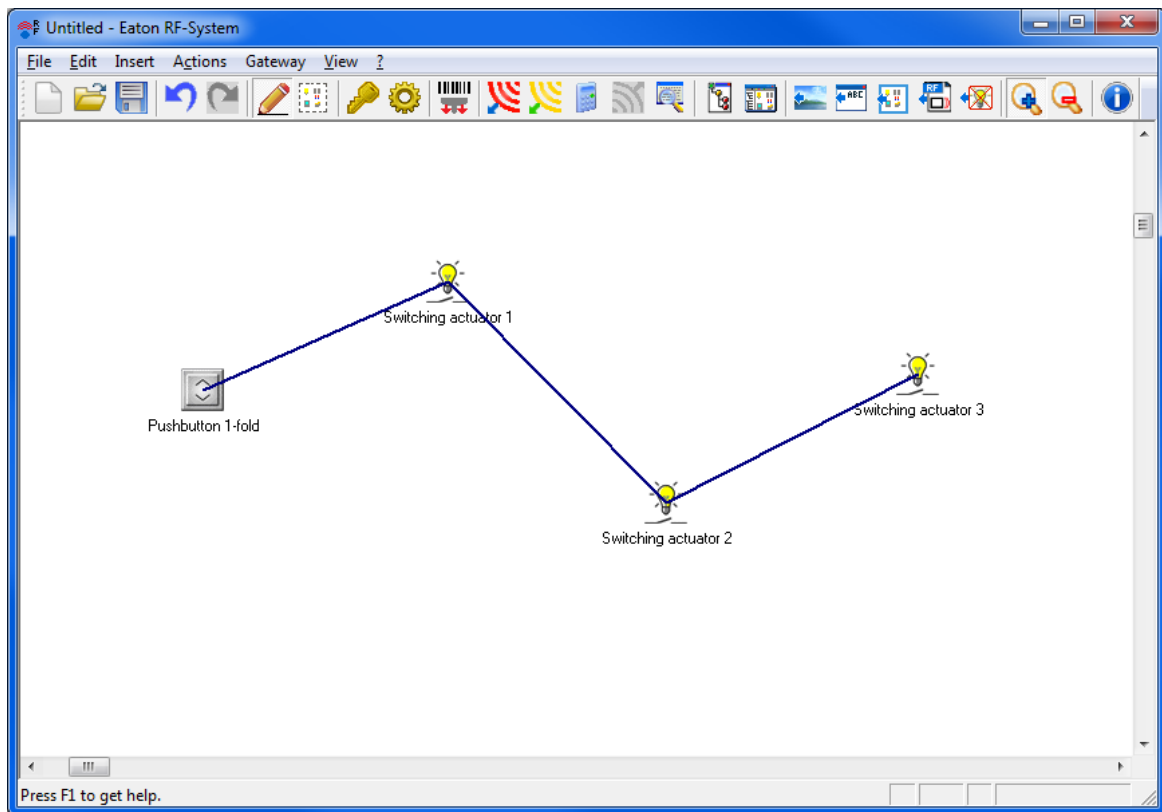
If you draw a connection from a sensor to an actuator and it is calculated, the MRF program checks the best connection path based on the scanned reception quality of the devices.

If the reception quality between these two devices is too low to establish a direct connection, the MRF program tries to find a main supplied device in between the sensor and the target (actuator). This is the so called "Router". So that the message can not be sent directly from the sensor to the target it goes from sensor to router and from router to the target. If the first router doesn't understand the target a second router has to be found and so on... So in some cases it is possible to need more than one router.

Specific termination of the commands when routing:

1. Sensor send command (sensor to target-actuator) to the router
2. Router acknowledges the command to the sensor (or when the sensor is a router...)
3. Router sends the command (Sensor to target-actuator) to the target-actuator (or to the next router...)
4. Target-actuator acknowledges to the router and executes the command

When clicking right on a connection and "Show routing" the following is shown:



As you can see the command from 1-fold pushbutton to Switching actuator 3 is routed by Switching actuator 1 and switching actuator 2.

What is a group function?

If the same sensor is connected to more than one actuator we talk about a group function procedure.

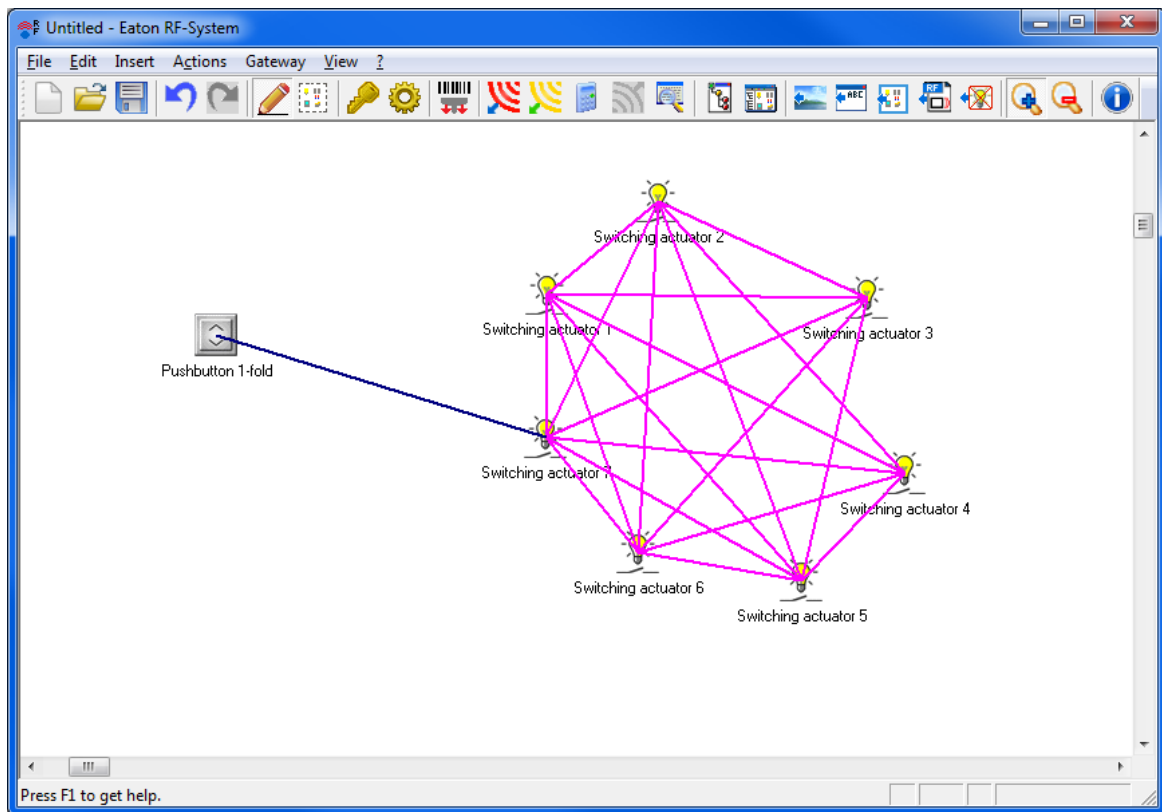
Based on the scanned reception quality a master of the switched group of actuators is determined. The master has the assignment to acknowledge the command to the sensor. Every other group member does not acknowledge the command, however they only know that they are part of the group and repeats the command of the sensor identically. We call this behaviour "resend". Now not every member does this resend really. As a result of the reception quality of every group member to each other the program decides which actuators should make a resend and which not.

So it is ensured that every member understands the command and executes it reliably.

Members of group function has to understand at least 1 other member of the group to take part in a group function.

Display in MRF:

By clicking right on a connection of a group function and "Show routing" you can see the following:



The blue line goes from the sensor to the group master (Switching actuator 7). That actuator acknowledges, every other actuators are just members of the group.

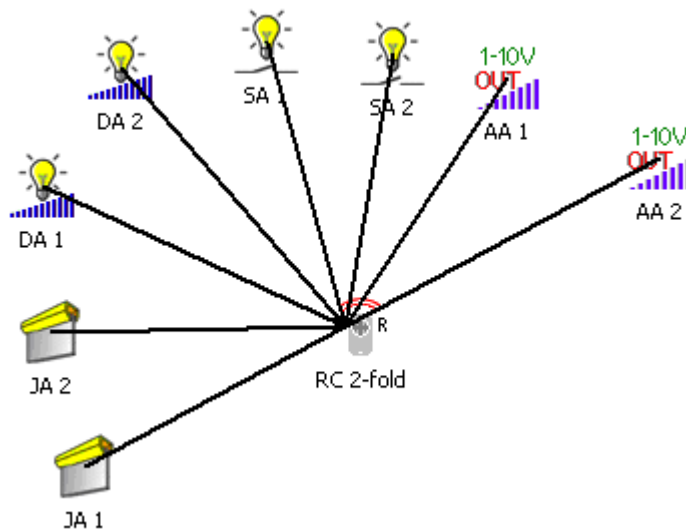
Configure the group function

The function is used to configure a common group function from one sensor to many actuators in one single step. The bigger the group is the more time I can save by using this function.

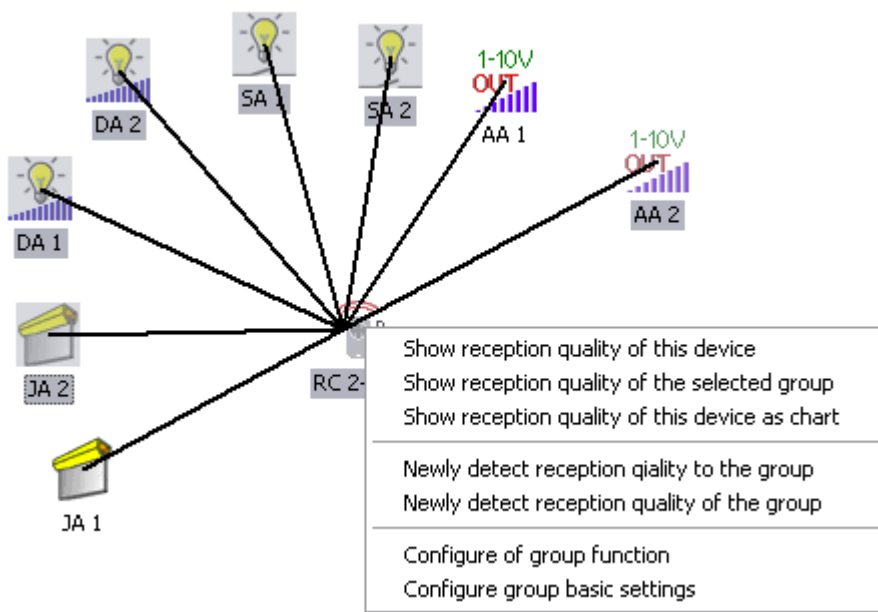
To be able to use this function one sensor and at least one actuator that has a connection to that sensor has to be selected. For executing this function you have to right click the sensor and choose the option 'Configure the group function' in the popup menu. If you selected a sensor with more than one sensor channel you will be asked to choose the desired channel. After that the configuration windows of the selected actuator types will pop up one after another so you can configure the function for each actuator type individually.

Example:

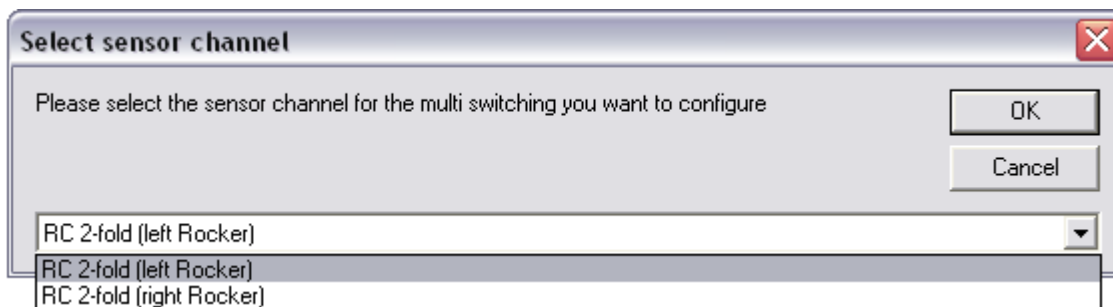
Group function of several actuators of different type for RC-2-fold (left rocker) – OFF function:



Step 1 – Select the desired actuators, the sensor and start the function

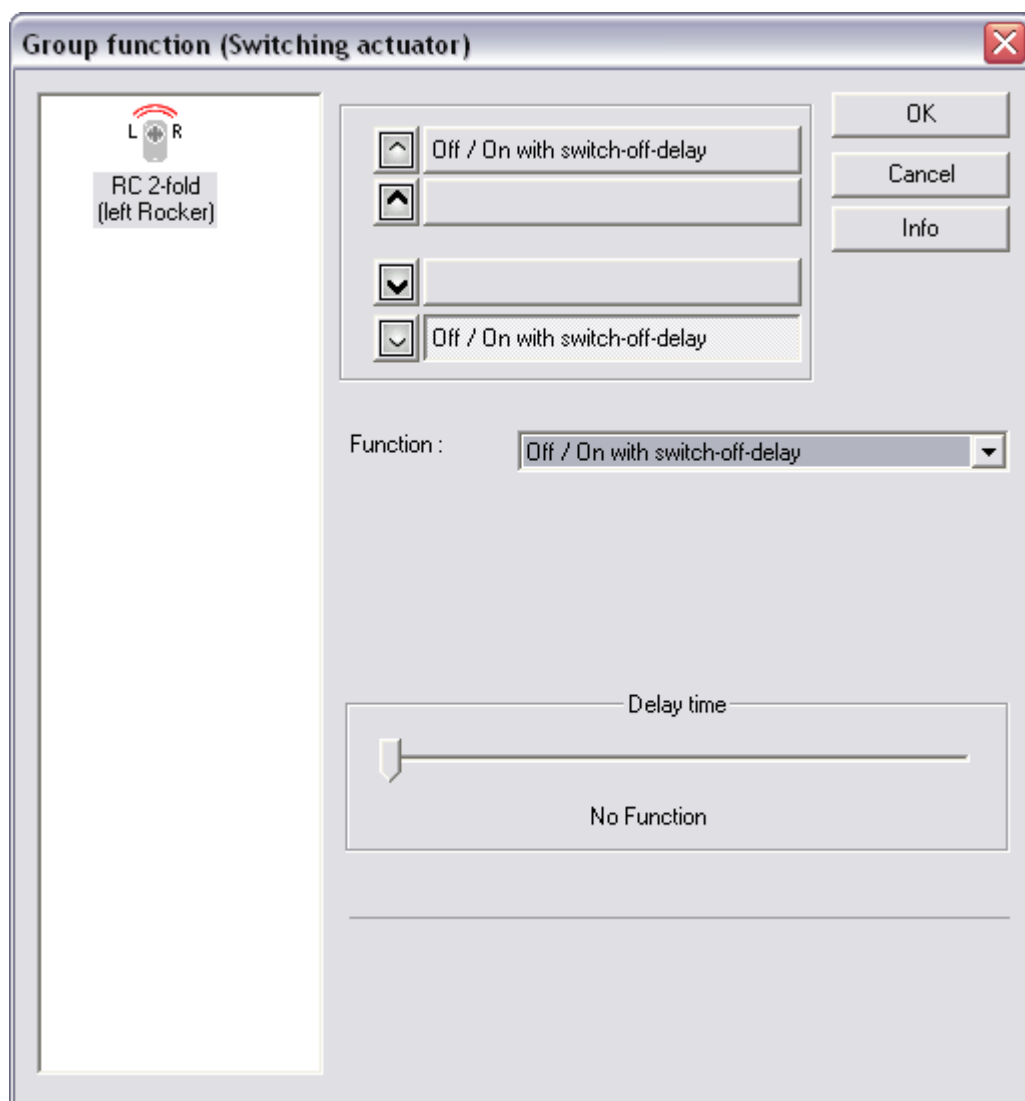


Step 2 – Select the sensor channel




For all devices but AA1 and JA1 the connection of FB-2-fold (left rocker) will be configured now

Step 3 – Configuration of device type switching actuator



Step 4 - Configuration of device type dimming actuator

Group function (Dimming actuator)



RC 2-fold
(left Rocker)

☐ ☐

☐ Off / On with switch-off-delay

☐

☐

☐ Off / On with switch-off-delay

OK

Cancel

Info

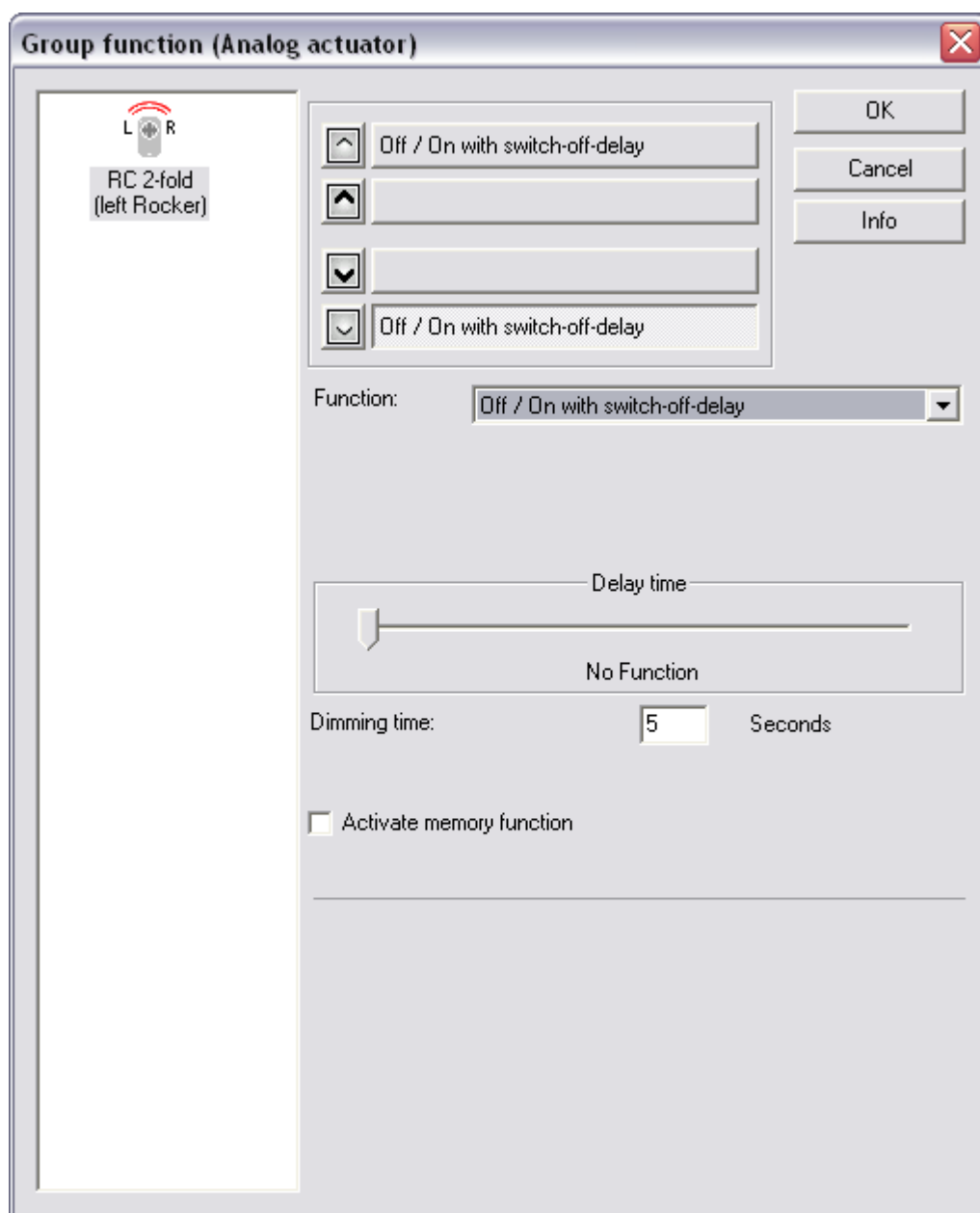
Function :

Delay time

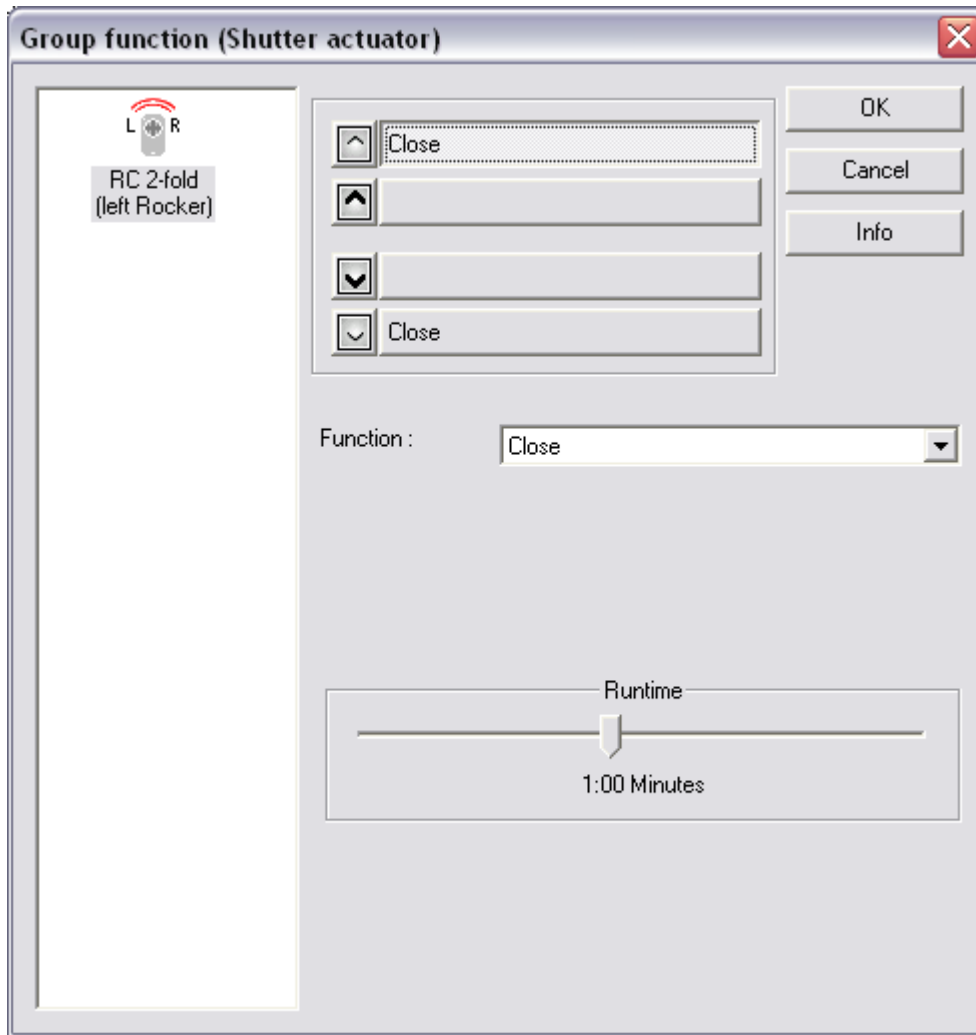
Dimming time: Seconds

☐ Activate memory function

Step 5 - Configuration of device type analogue actuator



Step 6 - Configuration of device type shutter actuator



The configuration is now complete. Every selected actuator has been configured.

Configure group basic settings

This function serves the purpose of doing the settings for devices of the same type in one single configuration window. It should be done before you make connections to other devices.

This function is available for the following devices:

-) Switching actuator
-) Dimming actuator
-) Analogue actuator
-) Heating actuator
-) Binary input battery supplied
-) Binary input 230V
-) Motion detector
-) Temperature input
-) Room controller
-) Room controller with humidity
-) Analogue input
-) Impulse input
-) Energy measurement sensor
-) BOS/COS interface

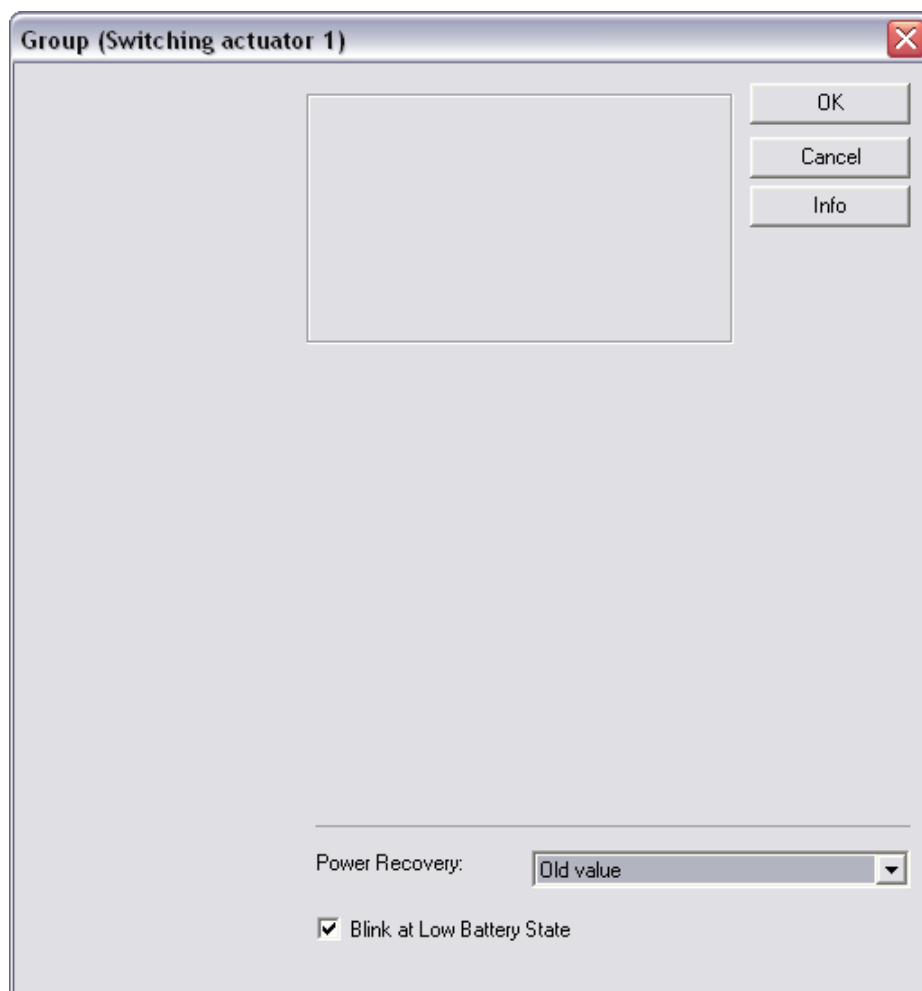
If there is a device in the selected group where a parameter is already locked (because there is a

connection to another device for example) it will also be locked for the whole group.
For a group of actuators you can only configure the basic settings with this function and for sensors basically every parameter can be configured.

Process:

If you select more than one device with the selection mode there will be the option 'configure group basic settings'. The function will only work if the selected devices are of the same type.
Depending on the device type the configuration window of the group will popup after executing the function and you can do the common settings for the selected devices.

Group settings switching actuator:



Group settings dimming actuator:

Group (Dimming actuator 1)

OK
Cancel
Info

Dimming limits: 20 % to 100 %

Power Recovery: Old value

☒ Blink at Low Battery State

Group settings analogue actuator:

Group (Analogue actuator 1)

OK
Cancel
Info

Dimming limits: 20 % to 100 %

Power recovery: Old value

☒ Blink when low battery state
☒ Relais should also switch

Characteristic curve:
☒ linear
☐ logarithmically

Group settings heating actuator:

Group (Heating actuator 1) ✕

OK
Cancel
Info

Comfort raising

2:00 hours

Operation mode

Toggle operation mode by:

Set value: °C

Window contact

Window contacts:

Set value: °C

Power recovery: ▼

Group settings binary input battery supplied:

The screenshot shows a software window titled "Group (Binary input batt 1)". In the top right corner, there are three buttons: "OK", "Cancel", and "Info". Below these, the "Working Mode:" is set to "Mode 2: A,B = Switch" via a dropdown menu. The window contains three main sections: "Switch Contact A" with a checkbox "send cyclically every" (unchecked) and a slider set to "2:00 hours"; "Switch Contact B" with a similar checkbox (unchecked) and slider (set to "2:00 hours"); and "Behavior when opening a Switch Contact" with a slider ranging from "Fastest Reaction" to "Maximum Battery Durability", currently positioned towards the "Fastest Reaction" end.

Group settings binary input 230V:

The screenshot shows a software window titled "Group (Binary input 230V 1)". It features the same "OK", "Cancel", and "Info" buttons in the top right. The "Working Mode:" dropdown is also set to "Mode 2: A,B = Switch". This window contains two sections: "Switch Contact A" with an unchecked "send cyclically every" checkbox and a slider set to "2:00 hours"; and "Switch Contact B" with an unchecked "send cyclically every" checkbox and a slider set to "2:00 hours". Unlike the first window, it does not have a section for "Behavior when opening a Switch Contact".

Group settings Motion detector:

Group (Motion detector 1)

OK
Cancel
Info

Switch Contact A

☐ send cyclically every

2:00 hours

Switch Contact B

☐ send cyclically every

2:00 hours

Behavior when opening a Switch Contact

Fastest Reaction Maximum Battery Durability

Group settings Temperature input:

Group (Temperature input 1)

OK
Cancel
Info

Channel A

☐ Send Switching command

☒ Send Temperature value

Most exactly Measurement Maximum Battery durability

☐ send cyclically every

2:00 hours

Offset: 0 °C

Channel B

☒ Send Switching command

Switching Point: 21 °C

Hysteresis: 1 °C

☐ Send Temperature value

☐ Send cyclically every

2:00 hours

Offset: 0 °C

Group settings Room controller:

Group (RC 1)

☒ Send Switching command
Switching point 1: 21 °C Switching point 2: 18 °C
Hysteresis: 1 °C

☐ Send Temperature Value

☐ Send cyclically every hours

Offset temperature: °C

OK
Cancel
Info

Group settings Room controller with humidity:

Group (RCF 1)

Temperature:

☒ Send switching commands
Switching point 1: 21 °C Switching point 2: 18 °C
Hysteresis (1+2): 1 °C

☐ Send temperature value

Temperature offset: °C

☐ Send cyclically every hours

Humidity:

☐ Send switching commands

☒ Send humidity value
Most exact measurement Maximum battery lifetime

Humidity offset: %

☐ Send cyclically every hours

OK
Cancel
Info

Group settings Analogue input:

Gruppe (Analogue input 1)

Channel A

0 bis 10 Volts Measured value: 0 till 100

☒ Send Switching commands Switching point: 17.75 Hysteresis: 0.25

☐ Send value

☐ Send percentage value

☐ send cyclically every 2:00 hours

Channel B

0 bis 10 Volts Measured value: 0 till 100

☒ Send switching commands Switching point: 17.75 Hysteresis: 0.25

☐ Send value

☐ Send percentage value

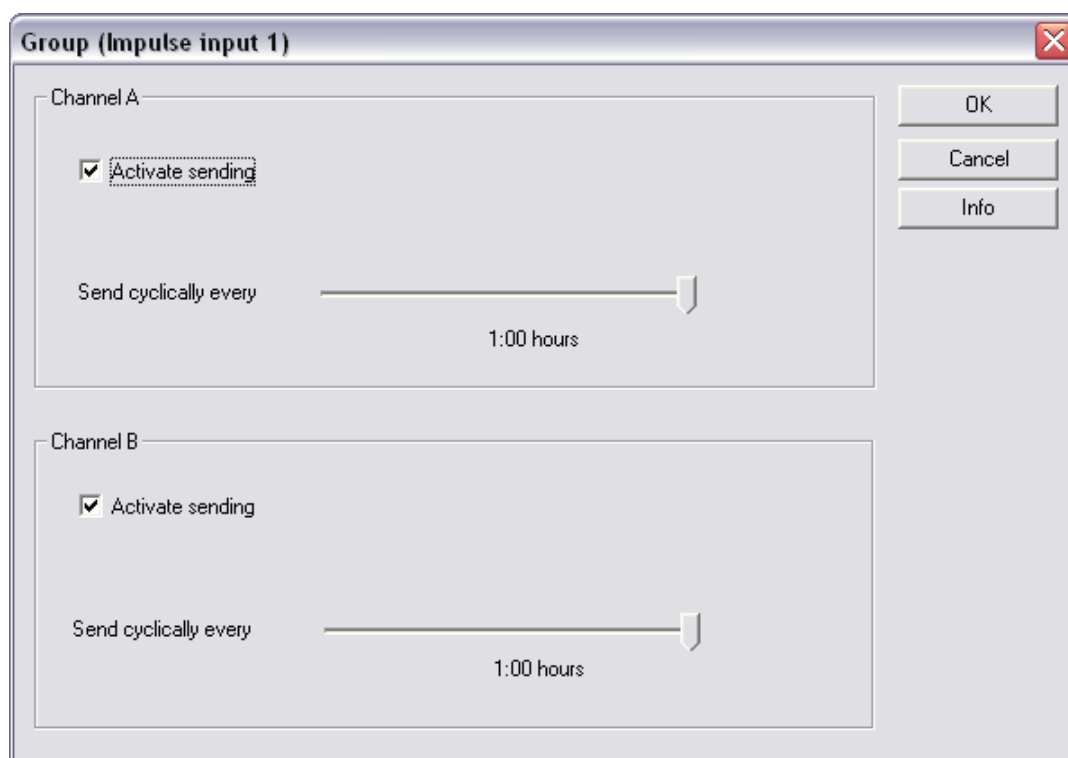
☐ send cyclically every 2:00 hours

OK

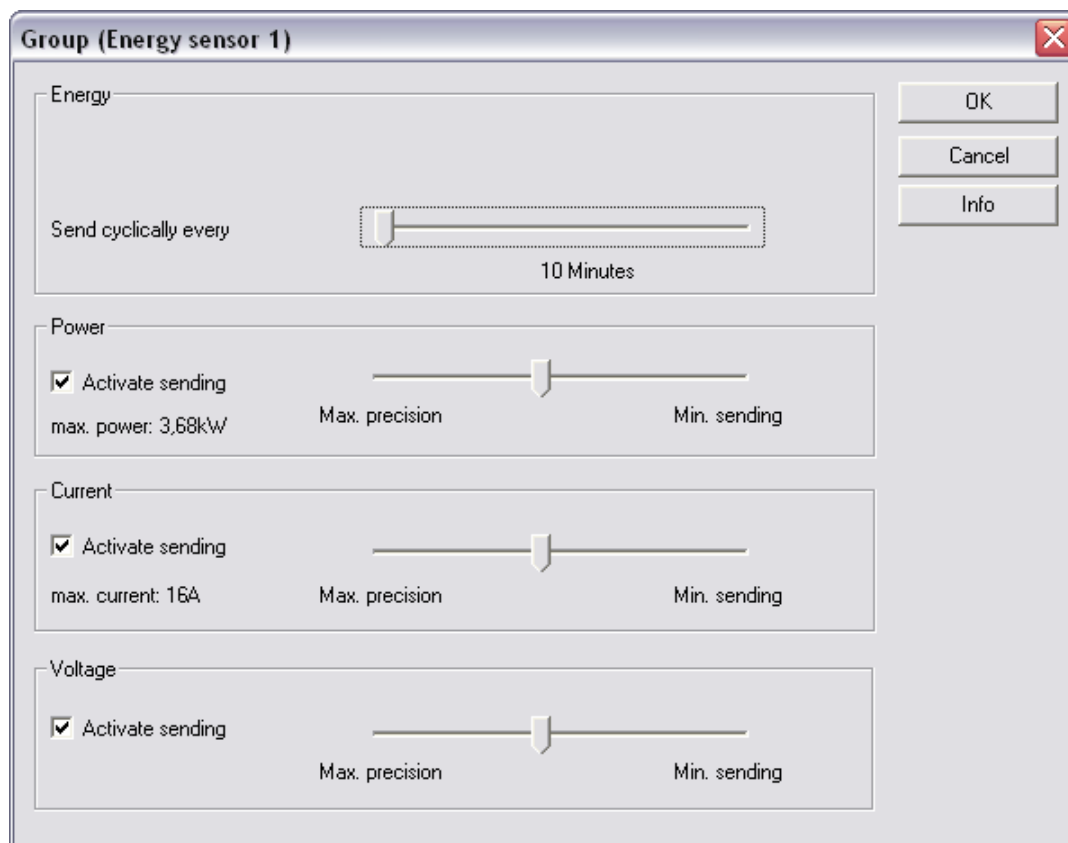
Cancel

Info

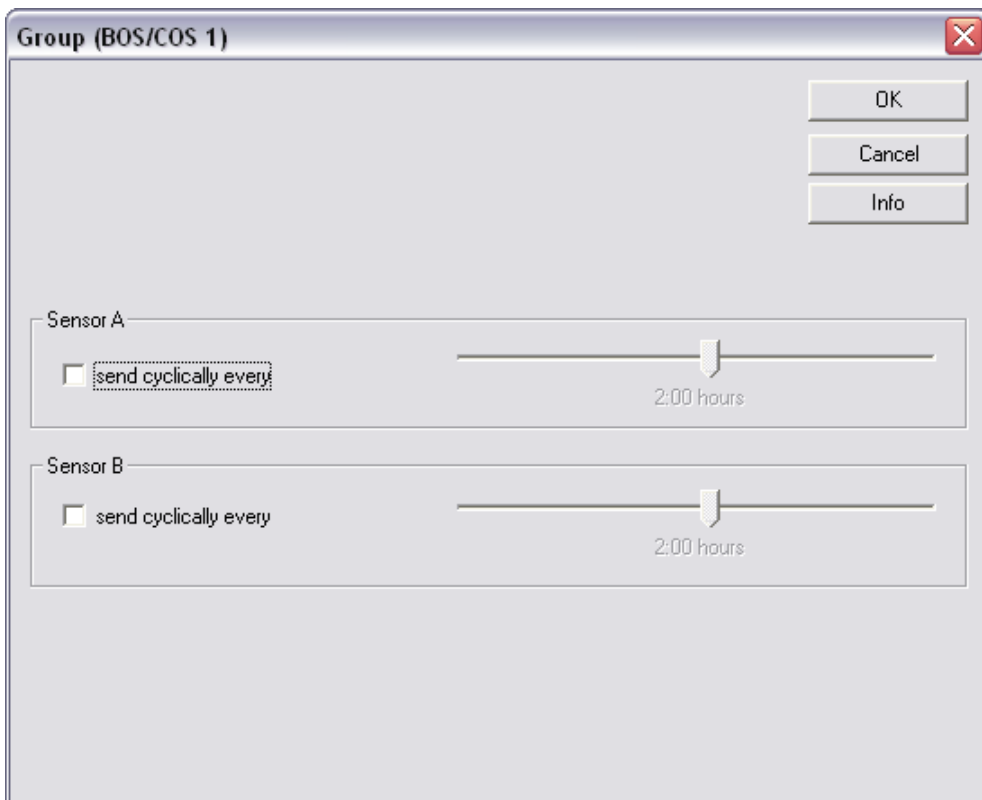
Group settings Impulse input:



Group settings Energy measurement sensor:



Group settings BOS/COS Interface:



Settings that are locked and so can not be changed any more will not be displayed at all. After clicking OK the settings will be done to all selected devices.

Device Pop-up Menu

The *Drop Down Menu* serves for sending commands directly to the actuator or sensor, for carrying out settings or for displaying properties (such as reception quality, etc.).

It is slightly different for each device, with certain selection options being available for all components.

General selection options (for all devices):

Remove
Loading default data
Clear Password
Load password
Copy selected devices
Change name...
Device-note...
Connection wizard...
Scan devices new
Load device new
Get reception quality new
List of assignments...
Reception quality...
Reception quality
Connection
Assign to Topology ▶
Settings

Delete: Removes the device from the configuration and deletes it from the screen

Load default settings: Loads the component with its default settings

Delete password: Deletes the system password in the device (if there is any such password)

Re-scan the device: Re-scans the device (modifications not yet loaded will be overwritten)

Reception quality: Displays the inter-device [Reception Quality](#) as lines.

Connections: Displays the inter-device [Connections](#)

New in the professional version: Get reception quality new, investigates the reception quality for this device new

New for 1.40:

Reception quality...:

The reception quality of this device can now be displayed with respect to all the other devices in the system in table form by means of the device's drop-down menu.

This table displays the reception quality as a % and the name of the other devices.

Allocation list...:

A list of all the connections or all the devices with which a particular device is communicating can be displayed by means of the device's drop-down menu under the option "Allocation list...".

For mains-powered devices:

Sensor – specifies all the allocated sensors and what role the device plays in this connection (group member, group master, resender)

Routing – specifies all the routing paths which run via this device (sender, destination, next device)

For battery-powered devices:

Destination device – specifies the destination device and the next device for the relevant connection.

Exceptions:

Room Manager, Home Manager and the communications interface cannot function as routers, so there is no routing display for these devices.

The 230 V binary input and analog input are mains-powered sensors and can therefore function as routers.

Routing?:

For a mains-powered device, the “Routing?” option on a drop-down menu specifies whether the device should be used as a router when calculating connections or not.

This may, for example, be helpful when using mobile devices such as adapters or devices which are not always connected to the mains!

Change name:

Option to change the device name.

Load password:

Loads the defined system password in the device.

New with 2.00:

Copy selected devices:

Copies the device as a virtual device to the clipboard, in order to later add it to the project using the function "Insert copied devices".

Device note:

Opens the dialogue for the [device note](#).

Connection wizard

Starts the [Connection wizard](#) function.

Assign topology:

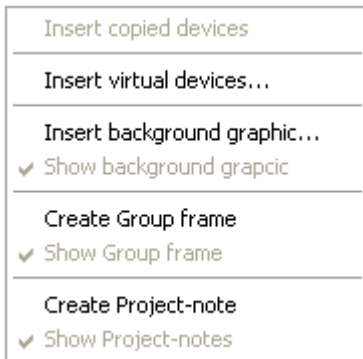
Assigns the device to a project topology area.

Other items such as Settings (opens the configuration window) and sending a direct command (ON, OFF, brightness) are specific for each device.

Workspace Pop-up menu

The pop-up menu workspace appears when right-clicking on the workspace.

It allows for inserting of new functions such as Background Image, Group Frames, or Project Notes, or for changing Settings.

**Insert copied devices:**

Inserts copied virtual devices from the clipboard to the selected position.

Insert virtual devices...:

Opens the [Virtual Device Database](#) function.

Insert background graphic...:

Executes the [Insert Background](#) Image function.

Display background graphic:

Shows or hides the background image.

Create group frames:

Activates the [Create Group Frames](#) mode.

Display group frames:

Shows or hides the group frames.

Create project note:

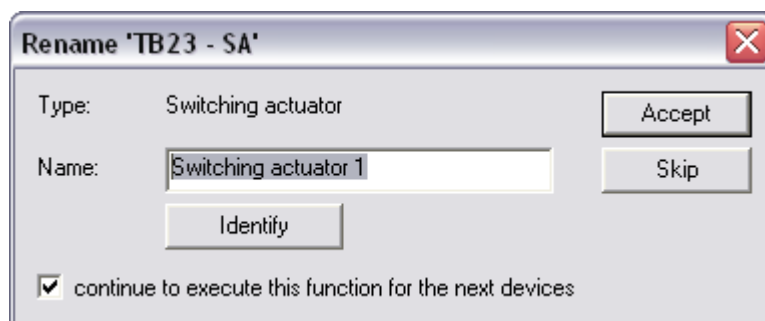
Executes the [Insert Project Note](#) function.

Display project notes:

Shows or hides the project notes.

Renaming while scanning

If this option is activated in the [project settings](#) before a scan process the scan process will pause after each new scanned device and gives the option to change its name in the project.



The device type of the scanned device and the actual name that can be changed (max. 21 characters) will be displayed in this window. If the scanned device is an actuator there will be the possibility to operate the device using the **Identify** button (TOGGLE command will be sent).

Using the option "continue to execute this function for the next devices" you can chose if this function will be executed for the next device again.

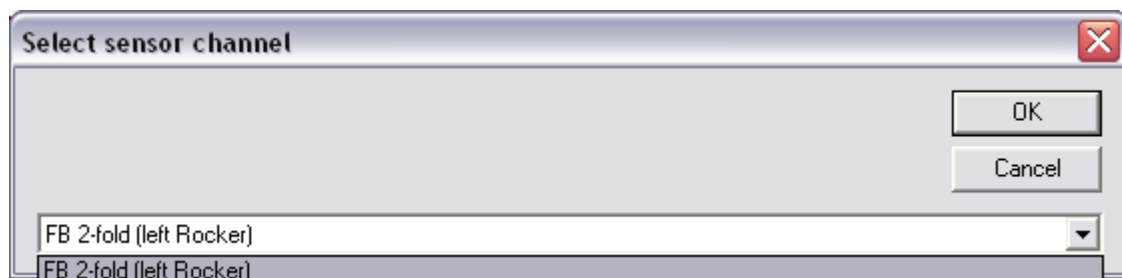
Using the **Accept** button will change the name of the device in the project and continue scanning and using the **Skip** button will continue scanning without changing the device name.

Connection wizard

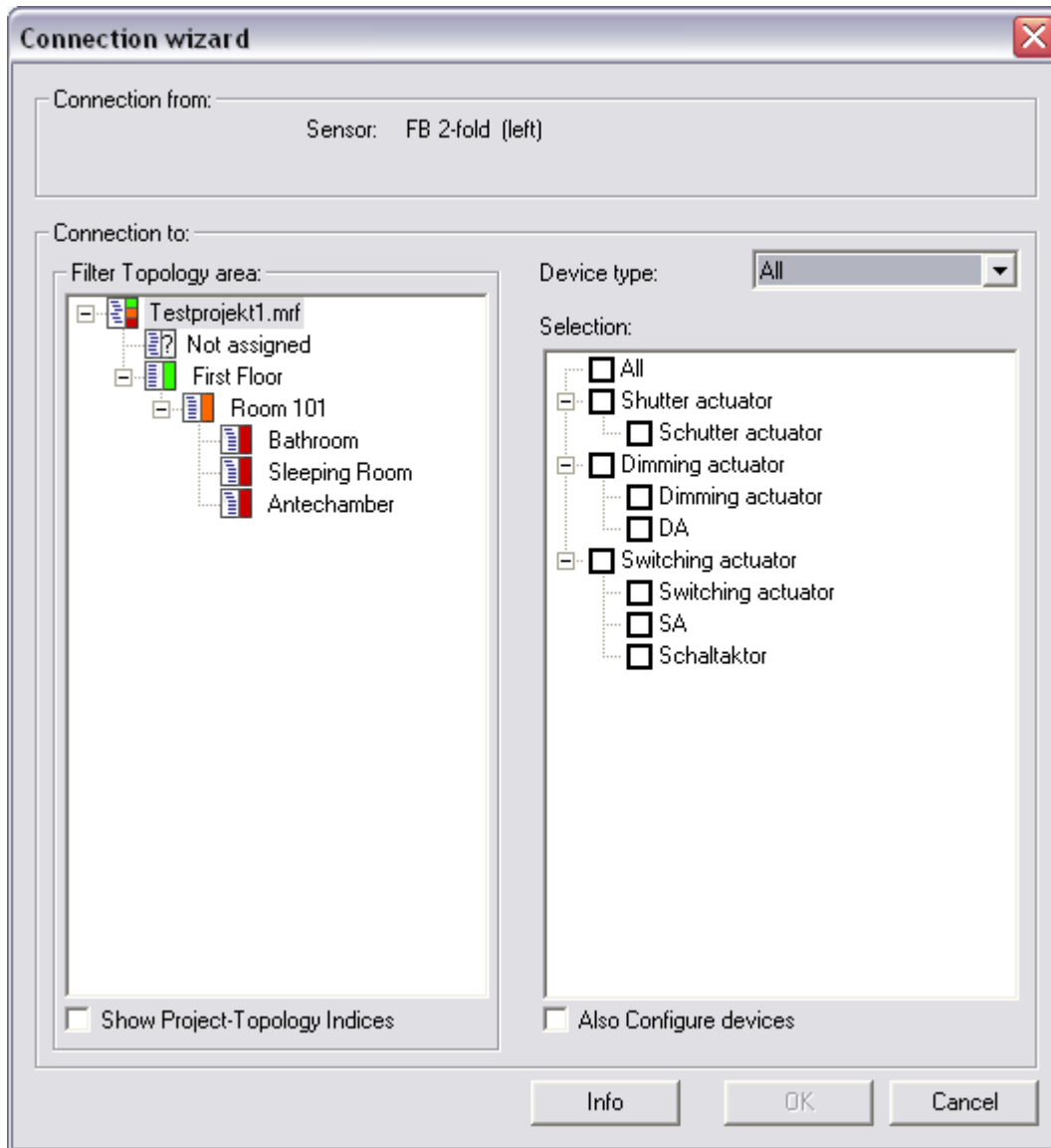
The function serves to create large group connections fast and without the manual drawing of connections.

It is executed directly from the pop-up menu of a sensor using **Connection wizard....** The chosen sensor channel must be binary (on, off, too large, too small, etc.) so that the function can be executed and only connections to actuators (switch actuator, dimming actuator, analogue actuator, blinds actuator, routing actuator) are possible.

After the function is executed, the desired sensor channel must be selected (only for multi-channel sensors).



After selecting the sensor channel and clicking on the OK button, you arrive at the main window of the Connection Wizard.



The window is divided into the following areas:

Connection from - sensor:

Here, the previously-chosen sensor channel from which the connection(s) will be made, is once again displayed.

Connection to – Topology area filter:

Here the current project topology is displayed. By choosing a topology area, a filter is applied and the devices in this area are displayed in 'Selection'.

Connection to - device type:

Here, a filter for the device types of the displayed devices can be applied in the 'Selection' area. A choice can be made between **All**, **Analogue actuator**, **Dimming actuator**, **Shutter actuator**, **Switching actuator** and **Routing actuator**.

Connection to - Selection:

In this area, you can left-click on individual **device names**, groups of **device types**, or **All**, to select the desired devices to which a connection should be drawn.

Connection to - Configure devices at the same time:

By activating/deactivating this function, you can determine whether the function "Configure group function" should be executed for the selection after clicking **OK**.

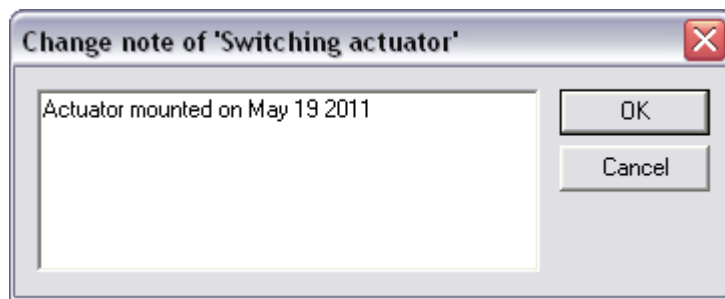
After completing the function, connections from selected sensor channels will be drawn to the chosen actuators, and the Wizard will terminate.

The Connection Wizard can be run for a sensor channel as often as desired. It is not possible to delete connections with it. Instead, connections will always be added with the additional selection of actuators.

Device note

Option to enter a note for an individual device. The information will be saved in the MRF project, but it will not be loaded in the device.

In Overview of System Configuration, the note will be displayed in its own column for each device. The maximum length of the text is 255 characters.



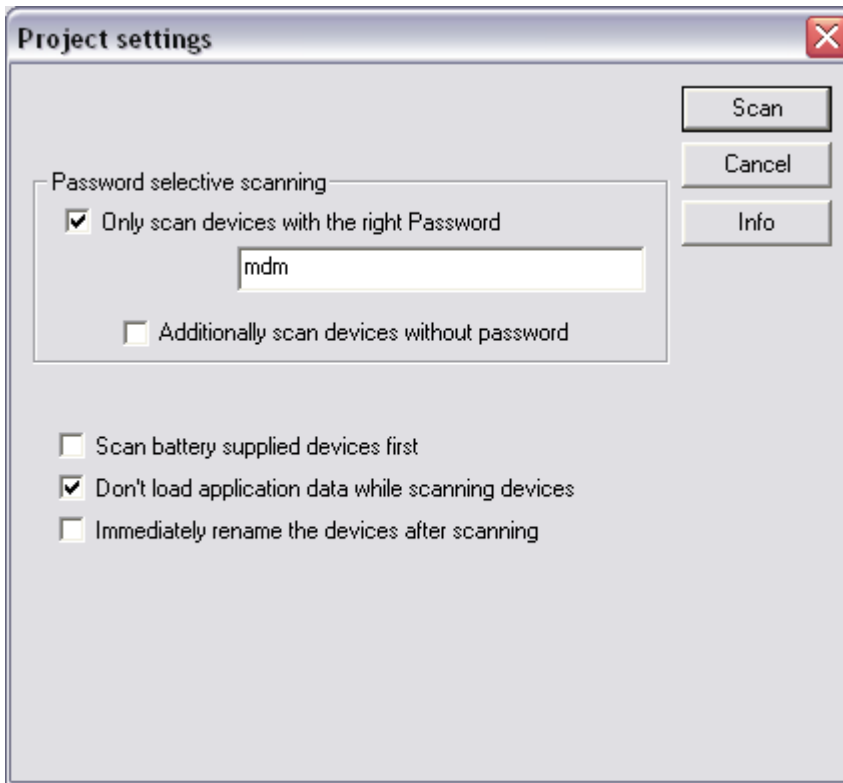
Project settings and project password

Project settings:

The Project Settings window will be displayed **before** and, depending upon the scanned devices, also **after** the scan process.

Before scan:

Here, diverse settings for the upcoming scan process can be activated.



Password-selective scanning:

Here you can decide if only those devices that satisfy the specific password conditions should be scanned. If this option is activated, the MRF will immediately verify upon scanning a device whether the password in the device matches the password that was entered here. If this is not the case, the device will not be further scanned and it will be blocked from this scan process. In addition, there will be no symbol displayed in the workspace for the blocked device. If the password matches, however, the device will be scanned normally. There is also a possibility to activate the option "Scan device without password" when entering a password. In this case, devices that do not have a password will be scanned together with those devices that do have a password.

If a password-selective scan process is not activated, scanning will proceed normally and devices that have passwords different from the current project password will be fully scanned, but will be displayed with a 'blocked symbol'. After scanning, you have the option of unlocking them by entering their passwords.

Additional scanning options:

Scan battery-supplied devices first: The scan process will not start with the search for mains-supplied devices; rather, it will wait for the activation of battery-supplied devices.

Do not load any application data while scanning: Activates/deactivates the loading of changed application data for already-known devices during the scan process.

Rename devices immediately after scan: Pauses the scan process after the scan of each device, and offers the option of immediately renaming the device in the project. (Additional information can be found [here](#))

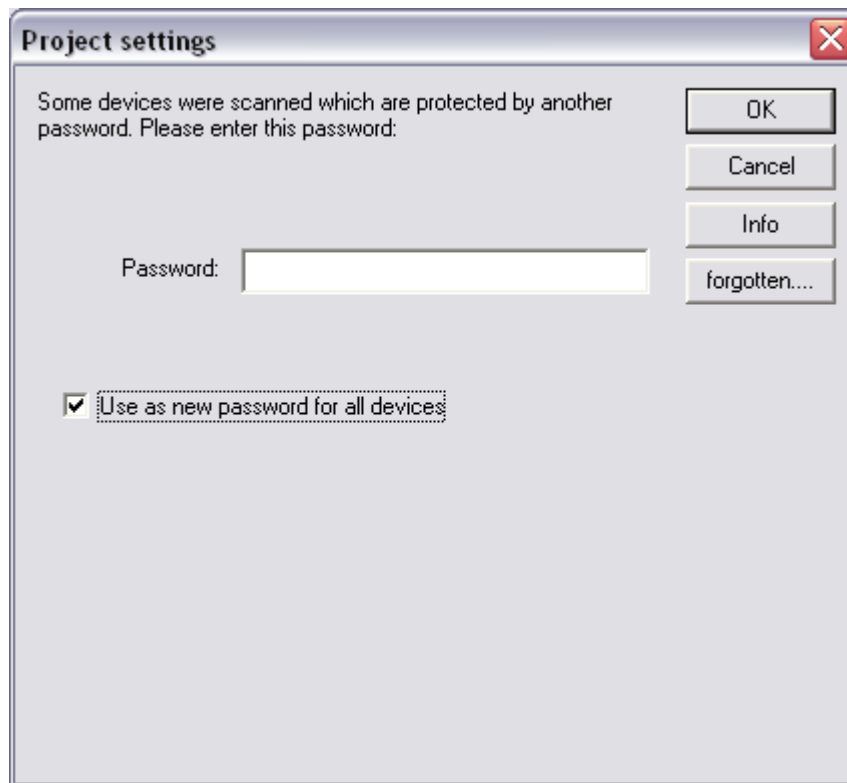
After scan:

Scan took place password-selectively with a different password than the current project password:

After selective scan with a different password than the current project password, you will be asked if you wish to set this password as the current project password.

If **Yes**, you will be shown the new password once again. If **No**, you will be shown the old password once again. In both cases, you will have the option of redefining the project password.

Password-protected devices were found:



If the current project password does not match the password in the scanned devices, you must enter the correct password for all "blocked devices". These devices will then also receive the current project password in MRF (the password will not yet be loaded, however).

With the option "Use as new password for all devices" (under the input field), you can assign the password that you use to unblock a blocked device, to the entire project (like Define a Password). This option is normally deactivated. If this option is activated and you now unblock devices with the correct password, the entire project will be assigned this password.

If you have forgotten the password to one or more devices, you will have the option to reset them using the **Forgot...** button, however you must have "On-Site Access" to the devices.

If this involves sensors, you must energise/activate them after pressing **Forgot...** – the basic settings will be loaded in the device and the password will be deleted.

With power-supplied actuators, you must reset them through the programming button (see Basic Mode programming plan).

Home Managers and Room Managers can be reset through the Settings menu, and you can set the communications interface to factory default settings, deleting the password in the process, through the Homeputer Software by going to the menu items: "Configure -> Hardware interface... -> Reset interface".

With Cancel, all locked devices are deleted from the screen, and you will only work with unlocked devices, i.e. with those for which correct passwords have been entered.

Project-Password:

Define password:

You can define a password for the system under this menu item. Each device forming part of the project, or which is to be scanned at a later date, will receive this password when loading (password, changes or complete).

When you start a new project and click on "Scan", this window also opens and you can define a password even before scanning. This password cannot be loaded in the devices during scanning, only when loading changes on completion of the scanning process.

Load password:

All devices forming part of the project which do not yet have the current password are loaded with the defined password.

This command exists both for an individual device (via the device drop-down menu) or for the system as a whole via "Edit -> Load password".

Delete password

The password for all devices within the project which have a password is now deleted.

Individual devices in which the password has already been deleted previously or which have not yet been assigned a password will not be included. The password for the project will also be reset to "No password".

The password can also be deleted individually from one device via "Device drop-down menu -> delete password".

However, parameterization and assignments to other xComfort devices will not be deleted.

The current system password is always shown in the bottom right area of the status bar.

Software Update of USB-RF-Sticks

With this function you can load a new software to the USB-RF-Sticks (CKOZ-00/14 and CKOZ-00/13).

For the [USB-RF-Configuration Stick](#) you can execute this function by „Menu Gateway -> Software Update and for the [USB-RF-Communication Stick](#) by Right click on the device symbol and selecting „Load new software...“.

Update procedure:

If the software update window shows the message „Boot loader OK“ no error occurred and the software update can be executed.



Select the new software by clicking the button „Select software“.

If a valid software for the device has been selected the message „RFP-file OK“ will be displayed in the update window otherwise a specific error message will be displayed and the „Load software“

button will remain deactivated.

If the selected software is valid the update process can be started by pressing the „Load software“ button.



During the software update it is not unusual that the LED of the USB-RF-Sticks will activate/deactivate several times. The actual state of the software update will be displayed in the update window as detailed as possible.

If the software update has been successful the update window will be closed automatically after a short notification message.

If an error occurs and the update is cancelled a short error message will inform you about the specific reason. Eventually some problems can simply be solved by unplugging/plugging the USB-RF-Stick and restarting the software update.

Speciality for Windows 8:

Windows 8 can have another speciality as well. In some installations it may generally not be allowed to install drivers that are not digitally signed by Microsoft. In this case the Software-Update function will show the error message „Driver installation failed (-536870353)".

The following changes are necessary to allow this function to be executed properly in Windows 8:

1. Start from the Metro main window and move the mouse to the lower right corner until the Pop-out bar opens
2. Click on the 'Settings' Symbol
3. Click on the text 'Change PC settings'
4. Click in the window 'PC Settings' on the item 'General'
5. Scroll down in the right window and select in the area 'Advanced Start' the option 'Restart now'
6. The PC will start in a special Mode and the screen will show different elements.
7. Click on the element 'Troubleshoot' and further on 'Advanced options' and 'Windows Startup Settings'
8. Click on the Restart-Button
9. Select in the next window the option 'Disable driver signature enforcement'
10. After selecting this function and Restarting the Software Update function can be executed properly

Advices when working with newer windows versions:

Administrator settings:

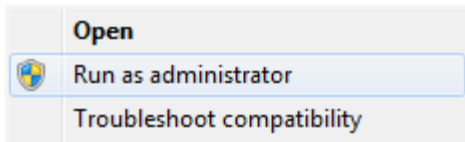
ATTENTION! Win7, Win8 and WinVista Users need to run the MRF-software as Administrator if

they want to use the software update function. The USB-RF-Sticks need a specific driver during the update process. This driver can only be installed if the MRF-software has administrator rights. If it has just normal user rights the error message „Driver installation failed (5)“ will be shown in the update window right after the start of the software update function.

You can run the Eaton RF-System as administrator in 2 different ways:

1. Run only once as Administrator

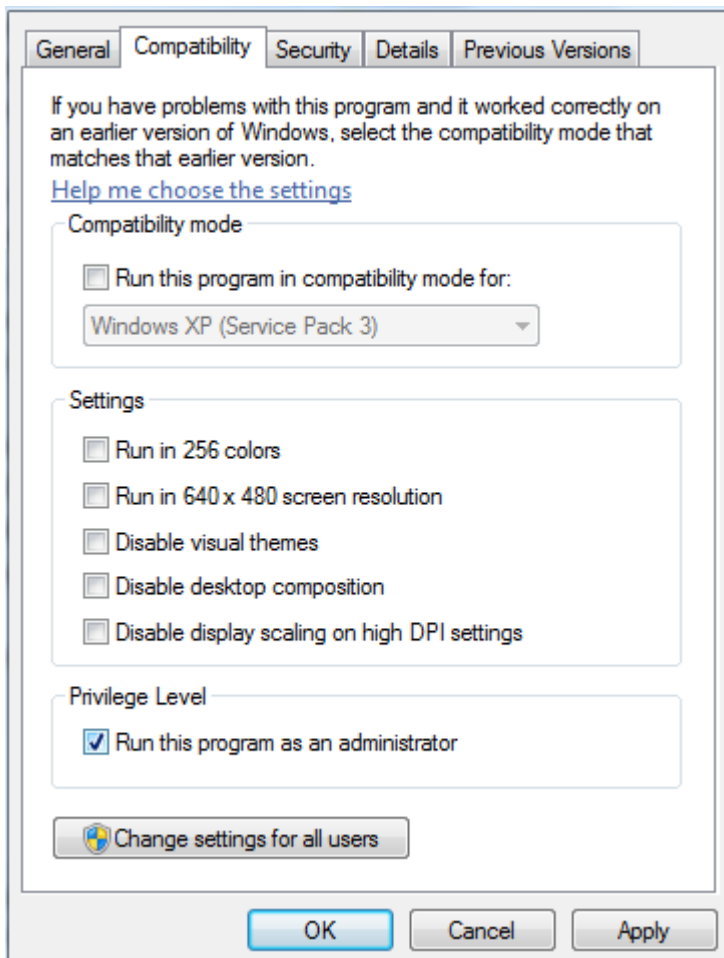
Right click on the shortcut of the Eaton RF-System and select the option „Run as Administrator“.



2. Always run as Administrator

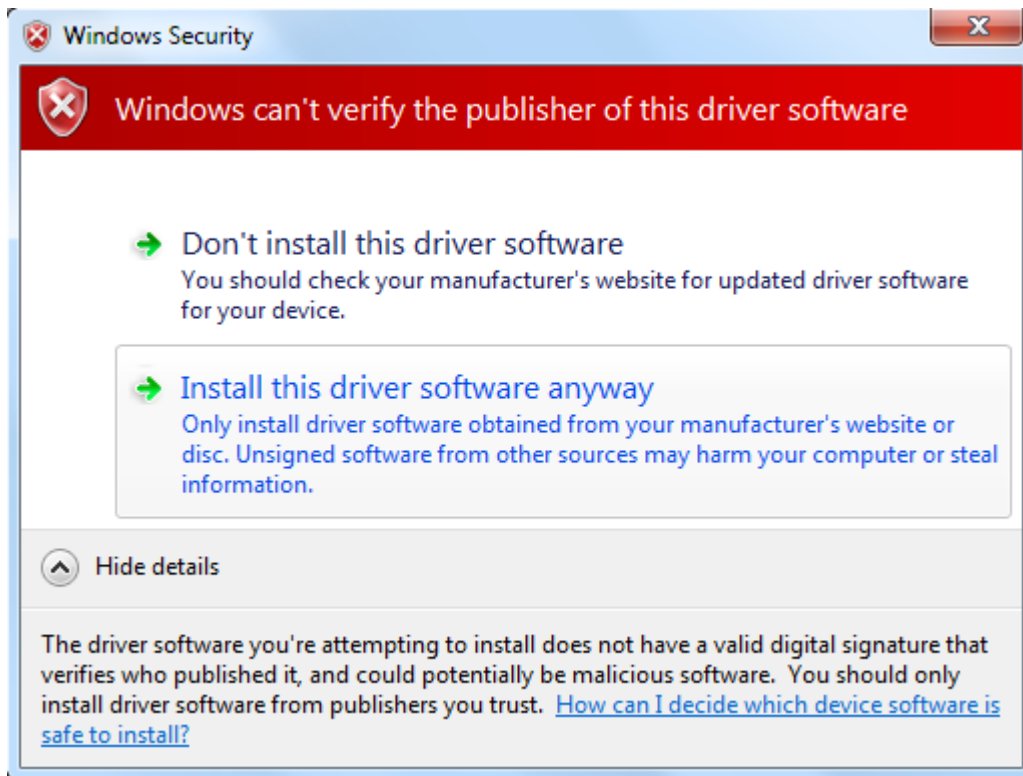
Right click on the shortcut of the Eaton RF-System and select the option „Properties“. Select the tab „Compatibility“, Activate the option „Run this program as an Administrator“ and click the OK button.

The Eaton RF-System will now always be started with administrator rights.



Digital Driver Signature:

Depending on the configuration of your windows installation the following window may pop up after executing the software update function.



The operating system simply informs you that the driver is not digitally signed. Please select the option "Install this driver software anyway".

This message will only occur if you run the software update for the very first time.

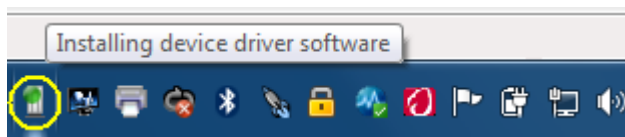
Driver search by Windows Update:

Right after the start of the Software update procedure the USB-RF-Stick will switch to a different mode and reconnect to the PC.

The system will detect it as a new device and the installation of a special driver that has been prepared by the MRF before will take place.

Depending on the configuration of your windows installation it may happen that Windows wants to search for a driver automatically using the Windows update function before it allows the MRF to do the driver installation.

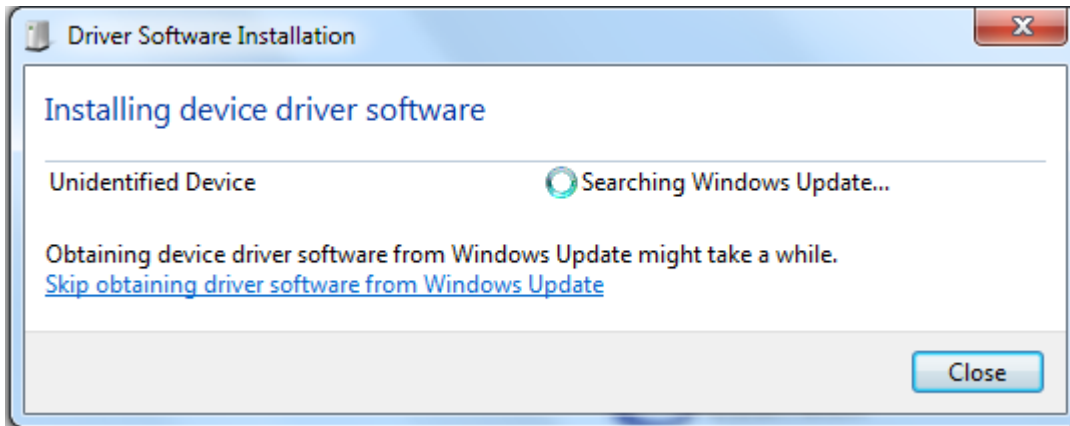
If that is the case you will see the following icon in your windows menu bar on the right side right after starting the software update.



The disadvantage of this function is that this may take some time or eventually be never completed at all. Since the software update function is already running and the MRF is waiting for the installation of the driver it will cancel the software update automatically if this takes too long.

We recommend to skip the automatic driver search using windows update.

Double click on the symbol in the menu bar. In the following window select the option „Skip obtaining driver software from Windows Update“.



Reconfirm your selection by clicking YES in the following window.



Now the driver that has been prepared by the MRF will be installed and the software update can continue.

If the software update has already been canceled because of the driver installation timeout simply restart it again.

This driver search will only happen if you execute the software update for the very first time. For further update procedures no actions are required.

Endnotes 2... (after index)

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